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Introduction

The winter edition of *Medical College of Georgia Today* provided an overview of MCG's research mission.

Now, we invite you to take a closer look at specific examples of that research.

In this edition, enter the laboratories and operating rooms of those involved in vision research. And meet some of the people directly affected by their work. The patients featured —a teacher, a real estate broker, a baby girl—would likely be blind without the care received at MCG.

MCG's vision research team, headed by Dr. Malcolm N. Luxenberg, is studying every facet of the eye.

Learn, for instance, about the team's study of the cornea, the eye surface that allows light to enter. Read about how cornea transplants restore vision, and how a better understanding of the cornea might lead to preventive or corrective treatment.

And read about the retina, the final point at which light is collected. The retina sends impulses to the brain, which translates them into images. What happens when the retina detaches, or when the blood vessels meant to nourish it go astray?

Also explored are studies into cataracts, glaucoma and eye conditions related to aging and diabetes.

And read about issues affecting nearly everyone. Does soap harm the eyes? How might eye drops be more effective? An MCG researcher is finding out.

Each researcher featured in this edition is studying a unique aspect of ophthalmology, but all share the same goal: a brighter future for everyone plagued by vision problems.

THE MEDICAL COLLEGE OF GEORGIA
The Health Sciences University of the State of Georgia

Today

USPS 867340 Volume 18, Number 4, Spring 1990

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The Medical College of Georgia is the health sciences university of the University System of Georgia. Focusing on health care education, research and patient care, the Augusta-based institution consists of MCG Hospital, more than 80 support clinics, statewide outreach programs and the Schools of Allied Health Sciences, Dentistry, Graduate Studies, Medicine and Nursing.

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Let There Be Light

The cornea is the eye's watch crystal.

It is the rounded, clear surface where light—the basis of vision—first hits the eye.

It alters the light's pathway and begins to focus the light.

The lens fine-tunes the focus to the retina, which is likened to camera film. Impulses generated are transmitted from the retina through the optic nerve to the brain's occipital cortex. There, impulses are translated into images.

We see.

But the cornea can also be the first place for eye trouble.

Meet Nancy Cooney.

The retired teacher and avid reader had cataract surgery in 1978. Within a decade, more trouble began. Her left eye began to weep. Her vision began to cloud. Her ophthalmologist, Dr. Michael Murphy, told her that her cornea was degenerating.

He also told her that the only treatment was a corneal transplant.

"I turned it down flat. I said, at my age, no," said the 83-year-old Augustan.

Mrs. Cooney didn't know much about transplants, but she was pretty sure she didn't want one. "I wasn't afraid of surgery. I just wasn't going to do it. That was my reaction. I was too old."

Her doctor didn't press. "But when I went back, which I did frequently, he said, 'Well, we can't do anything about it.'

"I bumped into things all the time." She'd hit her arms on doorknobs. If she closed her good right eye, she could only see soft shapes.

Then the day came when Mrs. Cooney could no longer see the big "E" on top of the eye chart.

She went to her family physician. He said she was a good candidate for transplant and that his grandmother had had two.

"One day I wrote Dr. Murphy a note and said, 'I'm ready to talk about it.'"

She was referred to Dr. David S. Hull, professor of ophthalmology at the Medical College of Georgia.

"I said, and tell him, I'm only coming to talk about it."

The two talked three times before Mrs. Cooney made up her mind.

She learned that the corneal clouding she experienced following cataract surgery is the most common

reason for corneal transplants.

"These are basically unexpected complications," Dr. Hull said. During cataract surgery, the edge of the cornea must be cut and folded back. Even that careful manipulation may damage the cornea's valuable lining layer called the endothelium.

This endothelium plays a vital role in a living circle.

The cornea normally receives nutrition from the aqueous humor found between the cornea and lens. This nutritious fluid leaks into the cornea and the job of the endothelium is to pump the aqueous humor out.

A steady leaking-in and pumping-out of fluid helps maintain a fresh, appropriate balance of aqueous humor in the cornea. The cornea stays clear and relatively thin compared to the white portion of the eye, the sclera, because of this continuous effort.

Problems occur when trauma or disease impair the effective operation of the vital endothelial cells by reducing the number of cells and the efficiency of those that remain.

The eye is relatively well-protected sitting back in the head. But sharp objects or missiles can acutely injure the eye and result in immediate problems with the cornea or the endothelial cells might be damaged and weaken over time.

Meet 47-year-old real estate broker Bob Bolton.

At about age 7, "My brother accidentally stabbed me in the left eye with a compass, the kind you put the pen down and draw a circle with." He didn't have any immediate problem; he doesn't even remember going to the doctor.

Years later, when Mr. Bolton had his eye examination before entering the U.S. Navy, the examiner asked him about a little white dot in that left eye.

Still later, as a 25-year-old businessman, someone accidentally hit the left side of his face. "All of the sudden I grabbed my left side of my face with my hand and I felt liquid come out of the eye."

This time Mr. Bolton went to the doctor, where he again was asked about the white dot in his left eye and was told he had developed glaucoma.

Years later, another doctor asked about the white dot and told him he didn't have glaucoma. Still later, his eye began to weep and was bloodshot.

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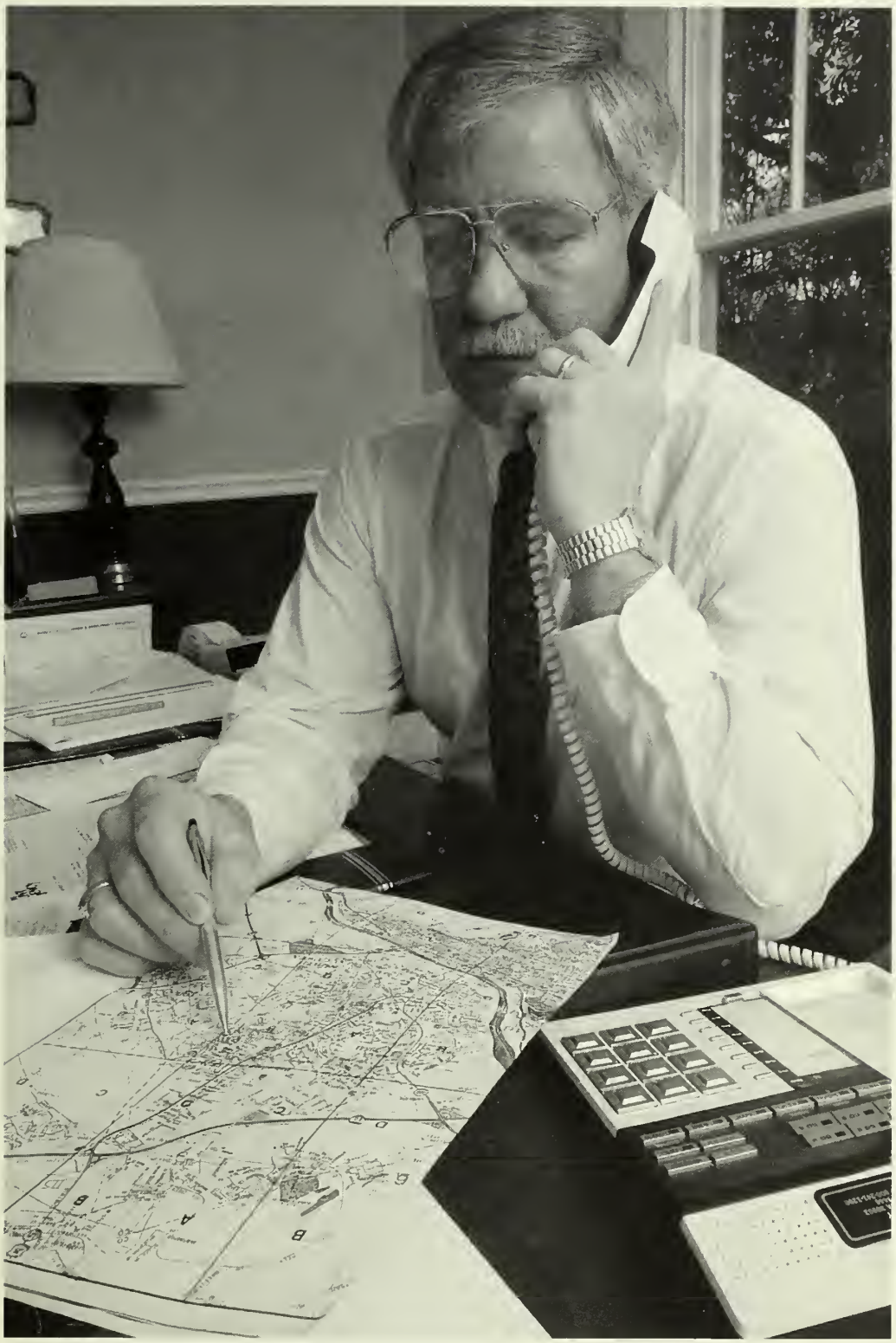
The Ultimate Legacy

Cornea donors leave behind the ultimate legacy: a bright future for others.

Sometimes in the morning, Trish Laitinen gets impatient waiting for the foggy bathroom window to clear.

Then she remembers that across this country, about 5,000 people wait for help in clearing a persistent, blinding fog.

"I wish that more people would realize the need that we have," said Miss Laitinen, eye bank coordinator at the Medical College of Georgia.



Bob Bolton, cornea transplant recipient, is now an organ and tissue donor.

The irony is that the potential cornea donor population is nearly endless.

Corneal tissue for transplant can be taken from nearly anyone age 2 to 65, except those who die with active hepatitis or AIDS. Even tissue from donors over age 65 can be used for emergency procedures, such as following an injury or ulceration.

These tissues can be taken up to six hours after the patient has been declared dead.

Also, because there is no blood flow in the cornea to carry the components of rejection, there is almost never a need for cross-matching blood types, as with vital organs such as the heart.

"Fifteen years ago, we had to operate within one to two days because we did not have the capability to store the cornea and preserve that lining endothelial layer for more than one or two days," said Dr. David S. Hull, MCG professor of ophthalmology.

Today, corneas can be maintained for up to seven days in a refrigerated buffered tissue culture medium.

But more frequently, there is little need to store corneas because the demand is more than the supply.

"As soon as I get good tissue, I place it," Miss Laitinen said. Tissue obtained locally is used to meet local needs first, but is shipped out to other transplant centers when that is not possible.

"I'd say probably the hardest thing is when I don't have the tissue and I have to cancel surgery," Miss Laitinen said. "I think about the patient waiting and how anxious they must be."

Possibly corneal transplants don't seem as dramatic as vital-organ transplants, such as the heart or liver, Miss Laitinen said. "But it changes the quality of their lives," she said of recipients.

Cornea recipient Bob Bolton says his own experience as a transplant patient made him acutely aware of the importance of organ and tissue donation.

He and his wife, Cindy, now are both organ and tissue donors. "It opened my eyes to how we can really help a lot of people," he said.

"I'm certainly grateful to somebody," said 83-year-old cornea recipient Nancy Cooney.

—Toni Baker

Continued from page 4

This time, Mr. Bolton went to Dr. Murphy who told him he needed immediate surgery to remove a cyst for a 50–50 chance of saving his left eye.

"Needless to say, a tear or two came to me," Mr. Bolton said. He went to bed that night with a prayer that he keep his vision, but if he lost the vision in that eye, he would accept it.

He kept his sight, but it was blurry because of a cataract that had developed. So Mr. Bolton later required cataract surgery.

The subsequent need for a corneal transplant brought him to Dr. Hull.

"It was probably the result of the trauma as a child causing the cornea to partially decompensate," Dr. Hull said. "In other words, those endothelial cells were damaged. With time, they went ahead and totally shut down so they could no longer pump the water out."

It was the same result as seen in Mrs. Cooney, but for different reasons.

Corneal infections or inflammation can cause the cornea to thin out and ulcerate. Long-wear contact lenses also have been known to damage the cornea. These acute problems may even require an emergency transplant.

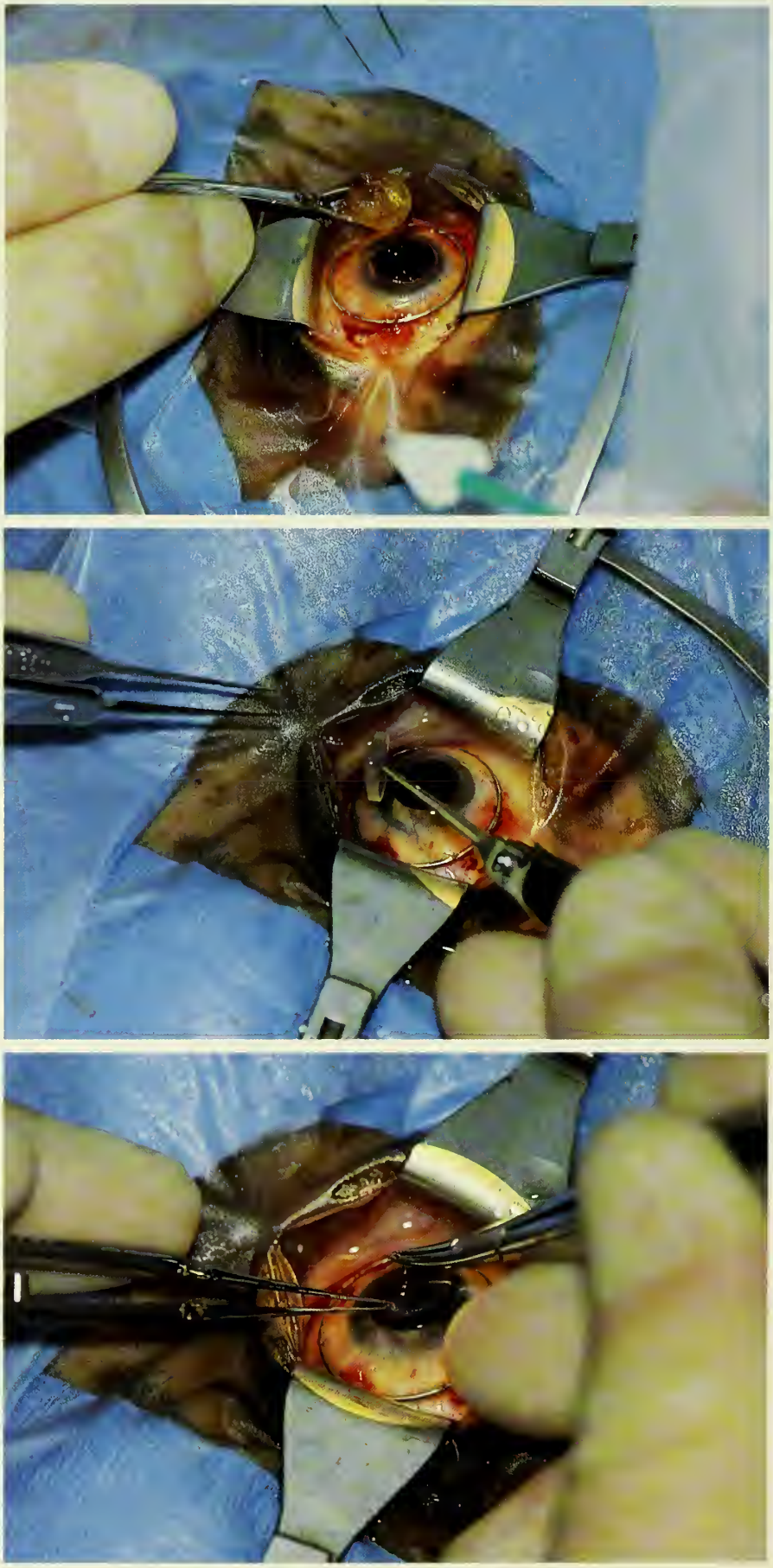
"Emergency procedures are partial-thickness corneal transplants and can be thought of as sort of like putting a patch on your tire to get to the gas station. In many people, that's enough," Dr. Hull said. Other times the patch may cause scarring that interferes with vision, so a further procedure is needed.

A disease called Fuchs' dystrophy also is a high-risk factor for gradual corneal clouding by decreasing the number of pumping cells and the effectiveness of those that exist. Keratoconus, a disease process in which a weak front corneal layer results in a misshapen cornea, also can result in corneal clouding.

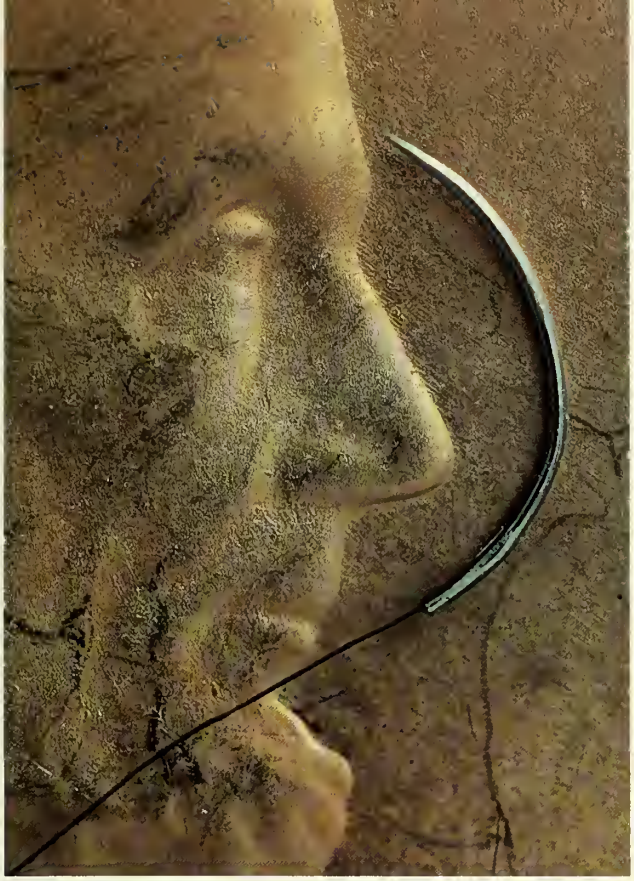
Clouding happens because the spacing of fibers in the cornea is altered so the fibers don't transmit light normally.

"The typical scenario would be that somebody has decreased vision and they are unable to perform the functions they need to live on a day-to-day basis either at work or around the house," Dr. Hull said.

When a patient is referred, Dr. Hull first looks at the cornea to establish that it is diseased.



A cornea transplant procedure: removal of the diseased cornea (top); positioning the donor cornea (center); suturing the transplanted cornea (bottom).



A graphic comparison of the size of the suturing needle and nylon thread used in cornea transplant surgery and the size of Abraham Lincoln's profile on the face of a penny. The thread is about half the thickness of a human hair.

If the patient has not had cataract surgery, he ascertains that the lens, which further focuses light rays on the retina, is clear.

Today's options enable patients with corneal deterioration and cataracts to have a triple procedure, Dr. Hull said.

In one operation, a patient gets a new cornea, has the cataract removed and gets an intraocular lens. "That is one thing that has definitely become better in the last 15 years is the technical advances which have allowed us to accomplish that with a high degree of reliability and safety," said Dr. Hull, who was recruited to MCG in 1974 to run the corneal transplant program.

Viscoelastic substances—clear, viscous substances that can be injected into the eye and removed—have played a major role in the success of this triple procedure by allowing the normal tissue planes of the eye to be maintained during surgery.

Still, the majority of the time, cataract surgery is done independently. "The ones we do a combined procedure on, we have a strong index of suspicion that their corneas are going to go bad," Dr. Hull said.

When doing a transplant, he always goes to the operating room with an intraocular lens, just in case. Sometimes the cornea is so cloudy that it's difficult to see the lens well until surgery.

"Then we want to establish that the retina is okay, that the health of the retina is such that if we were to give them a clear pathway, they could see," Dr. Hull said. The optic nerve is evaluated for the same reason.

"We want to make sure that the primary problem is with the cornea. And, if there is a cataract, so we can deal with both at the same time."

Working under a microscope, he cuts a central disc measuring 7 to 8 millimeters using a trephine, a round instrument about the size of a pencil eraser that works much like a cookie cutter.

Dr. Hull trephines about halfway through the cornea, then enters the cornea gently with a sharp blade and with scissors completes the removal of the corneal tissue.

The void is filled with a donor cornea that is about two-tenths of a millimeter larger than the tissue removed to ensure a good, tight seal. Nylon sutures about half the thickness of a human hair secure the transplanted cornea.

The actual cornea measures about 12 millimeters, but experience has taught that the incidence of rejection increases when the donor tissue is larger than 8 millimeters.

"The reason that corneal transplantation is so highly successful is that the cornea is an immunologically privileged site," Dr. Hull said. "It is away from the blood vessels that carry the components of rejection. The nearest blood vessels are at the edge of the cornea. If we can stay away from the blood vessels, the patient is less likely to become allergic to the cornea," Dr. Hull said.

Seven to eight millimeters gives the best optical results with the highest probability of success.

The transplant is performed under local anesthesia on adults and takes about one hour. A combined cataract procedure adds about 30 minutes.

Corneal transplants can be performed as day surgery, but Dr. Hull usually keeps his patients in the hospital overnight.

"The next day we want to be sure that the wound is intact and there are no leaks of aqueous humor and no signs of infection," he said.

Just as the lack of blood vessels is an advantage in reducing the chance of rejection, their sparsity is a disadvantage when it comes to healing because the vessels also carry components that promote healing. So, typically the fine sutures are removed about one year after surgery.

"Usually the vision is blurred after a transplant because the cornea has to reachieve its normal curvature," a process that may take six months to a year, Dr. Hull said.

But patients with the worst vision before surgery may see immediate improvements.

"That afternoon, Dr. Hull held up two fingers and said, 'How many fingers?' I could tell him," Mrs. Cooney said. She couldn't have seen them before.

And—with her glasses—she can now read the finest print on anybody's eye chart, plus almost anything else she gets her hands on.

"I read and I read. I have never stopped since I had this operation, four or five books a week, not to mention even the want ads in the paper and magazines. I even read cook books. I don't cook anymore, but I like to read about it."

"I see now, probably 20–40," Mr. Bolton said. "I can put on my contact and I can see probably 20–30." He doubts he'll ever again hit 20–20. But he has no complaints.

"As the song 'Amazing Grace' says, I was blind, but now I see." ■

—Toni Baker

Getting a Grip on Glaucoma

It's a disease that sometimes begins with a person noticing halos around lights.

If the disease progresses, the person's visual field can gradually close in until he only has tunnel vision.

Gradually, even the tunnel can fade away.

It's glaucoma, a disease characterized by increased pressure within the eye which can result in damage to the optic nerve. That can result in blindness.

Glaucoma is a fairly common disease. Of the 80 million Americans with eye disease, about 2 million have glaucoma and another million have undiagnosed symptoms of glaucoma, according to information from Research to Prevent Blindness Inc.

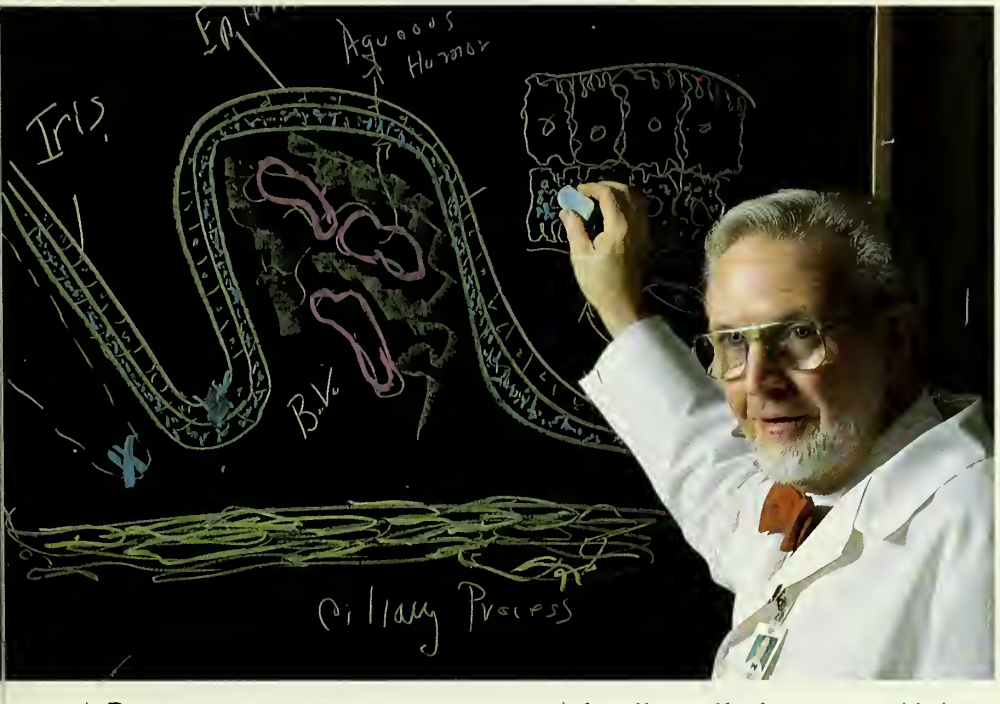
The most common of the three types of glaucoma—primary open angle glaucoma—is a slow process that cuts off the blood supply to the retina which ultimately dies without nourishment.

That's why glaucoma is the focus of several researchers' work at the Medical College of Georgia. Their work ranges from studies of the basic biochemistry of the eye to drugs—even marijuana—that might relieve the pressure buildup in the eye.

Glaucoma research tends to divide into three areas, according to Dr. Keith Green, a Regents professor of ophthalmology and professor of physiology at MCG.

There are studies focusing on the aqueous humor, the watery fluid that fills the chamber behind the eye's cornea and in front of its iris. Other

Dr. Keith Green



Dr. Thomas McDonald

studies are looking at how the fluid leaves the eye, a process called outflow that helps regulate eye pressure. And others are looking at developing or identifying new drugs that could treat the elevated intraocular pressure associated with glaucoma.

The formation of the aqueous humor is complex, according to Dr. Green, who among other things is studying the effects of hydrogen peroxide in the fluid.

Hydrogen peroxide—the same chemical used to bleach hair—is present naturally in very dilute quantities in the aqueous humor, Dr. Green said. But if there is a problem with the eye's outflow mechanism, the presence of hydrogen peroxide for extended periods of time may cause tissue damage, Dr. Green said.

"This tends to occur in people 50 and over, so is glaucoma just accelerated aging of the eye?" he said. "We think hydrogen peroxide has something to do with this."

Dr. Green has tested the effects of diluted quantities of hydrogen peroxide in the eyes of young animal models. Nothing happened, perhaps because enzymes in the tissues neutralized the hydrogen peroxide.

But in older animal models, the tissue responded adversely to the hydrogen peroxide and did not neutralize it.

Further studies may enable isolation of the enzyme that might fight the effects of hydrogen peroxide in the older eye, Dr. Green said.

At MCG, studies focusing on the aqueous humor also involve the ciliary body, two membranes located behind the iris that are involved in the eye's production of the fluid as well as its outflow.

And because the eye's cornea—the part of the eye through which light first passes—has no blood vessels, it is an important function of the aqueous humor to carry nutrients from the ciliary body to the cornea.

The ciliary body contains a heavy amount of blood vessels covered by two layers of cells. It is those cells that must take nutrients from the blood and proteins and get them into the aqueous humor, according to Dr. Thomas McDonald, a professor in the MCG Department of Anatomy.

"I'm studying the cilary processes, because they've not been studied tremendously," Dr. McDonald said. "They're something like the kidneys—they have a tremendous amount of blood vessels with two layers of cells over the top and they take plasma and turn it into something different from plasma (the aqueous humor)."

The fluid flows from the area behind the iris through the pupil into the chamber behind the cornea. On the sides of the cornea is meshwork through which the fluid returns to the veins to be replenished.

But sometimes that meshwork, which empties through the Canal of Schlemm in the eye, gets plugged—another cause of increased intraocular pressure.

Using light microscopy and electron microscopy, Dr. McDonald is systematically studying the blood vessels and the connective tissue between the two layers of cells that comprise the ciliary body.

Single layers of epithelial tissue are found in other parts of the body—the skin, mouth and intestines, for example. But the eye is the only place where two layers function together and are attached to each other, Dr. McDonald said.

"We're looking more at the faucet-side of the eye—not just at the meshwork, but more how the tissues work together," he said.

Dr. Teh-Ching Chu, a research associate for the MCG Department of Ophthalmology, also is looking at the ciliary body in his research, but he is more interested in how substances move through the tissue to the aqueous humor.

"Vitamin C is important in the eye, but humans can't synthesize vitamin C," said Dr. Chu, who is working with Dr. Green on his research. The vitamin must pass through the ciliary body to the aqueous humor and the cornea, he said.

To study that process, Dr. Chu must simulate the eye. He has set up two chambers—one with essential nutrients and the other with fluid. He places a tissue sample between the two chambers, and by using radioactive markers, measures the exchange.

So far, the study has shown that the tissue can transfer vitamin C both directions, although the nutrient side sends more across at a ratio of about 10 to one, Dr. Chu said.

The next step in the study will be to examine how the cross is made. Does it involve the eye's internal mechanisms, such as changes inside a cell? Impaling a cell membrane with a small probe might answer that question, Dr. Chu said.

Or, do the nutrients need a carrier, possibly a protein, inside the ciliary body? Other studies using electrophysiology could yield the answers, he said.

This process also could be used to determine how drugs currently used in glaucoma treatment actually work to control intraocular pressure: by reducing the production of aqueous humor or increasing the eye's fluid outflow.

Dr. Teh-Ching Chu

Other researchers at MCG are looking at glaucoma on the cellular level.

Dr. Ata Abdel-Latif, Regents professor of cell and molecular biology, is working with receptor proteins on the surface of the cell. He is trying to determine how certain medicines used in glaucoma treatment actually work at that level.

His research is all related to a process discovered by him and colleagues at MCG in 1984. The process, known as second messengers, is a sort of chain reaction brought about by a process within the cell.

Before 1984, researchers knew that some cells required increased levels of calcium ions—which are in storage inside the cells—before they become active. They also knew that the levels were raised by some outside stimulus, such as a hormone or a neurotransmitter.

But researchers also knew these stimuli could not penetrate the cell membrane. So how was the message to increase the calcium ions getting to the cell?

Through lipids, a fatty substance found in the membrane of the cell. The hormones or neurotransmitters were causing the lipids to break down into two products, one of which moves into the cell and releases the calcium ions from their storage site in the cell.

Finding out how this process works in the eye was what led to the discovery of the process, according to Dr. Latif. The initial research on second messengers was conducted on rabbit irises.

"But now we're looking at the biochemical level, trying to determine how the receptors work," he said. "When drops are added to the eye, we want to know what type of biochemical mechanisms are affected by the drugs we know already work (in glaucoma treatment)."

Some of the drugs used in glaucoma treatment include marijuana, another of Dr. Green's studies.

Since marijuana was first touted as a glaucoma drug, researchers have determined that a protein from the plant's cell walls lowers intraocular pressure. The protein also is found in other plants, such as kudzu, tobacco, turnip greens and lettuce, Dr. Green said.

But the drug has drawbacks, he said. In tests on rabbit models, the drug works well when given intravenously. But on monkey models, presumably as in humans, it works well only when put directly into the eye.

Because of those drawbacks, work is continuing on other products. For example, Dr. Green and two researchers from the Georgia Institute of Technology have applied for a patent on another material that could be used in eyedrops to reduce intraocular pressure.

Dr. Green also is conducting tests at MCG on mifepristone, a drug that reduces eye pressure when used topically, he said. Collaborative studies on the drug are being conducted in Scotland.

So MCG researchers have their fingers in several aspects of glaucoma. And that's a good idea, according to Dr. Green.

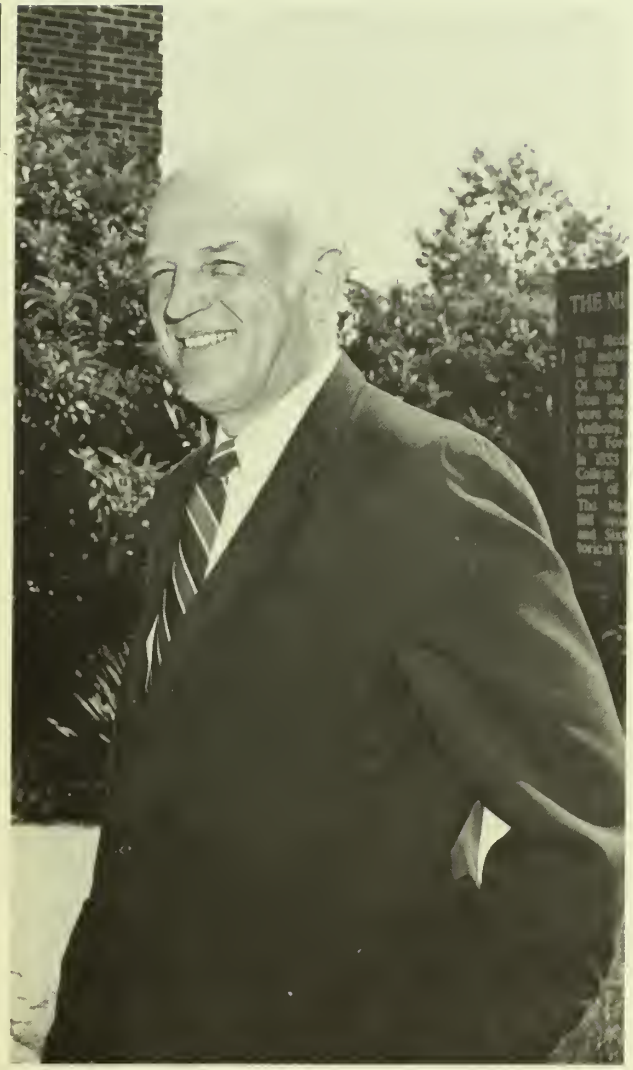
"You can't work in isolation on any of the research," he said. "The day of the individual scientist working at the bench are gone.

"Interaction and collegial research are the way to go. You get so much more accomplished that way," he said.

—Stephanie Neal

Dr. Ata Abdel-Latif

AlumNews



Dr. Moretz Dies at Age 75

Christine Hurley Deriso

Dr. William H. Moretz, president of the Medical College of Georgia from 1972 to 1982, died Dec. 27 at age 75.

He died at the MCG Hospital, the site of the last 27 years of his career.

Dr. Moretz, a native of Hickory, N.C., attended the North Carolina School of Medicine and Harvard Medical School. He spent his internship and residency in surgery at Strong Memorial Hospital in Rochester, N.Y.

He then served three

Dr. William H. Moretz

years in the U.S. Army. He worked briefly in Rochester, then joined the University of Utah College of Medicine as associate professor of surgery. He joined MCG in 1955 as professor and chairman of the Department of Surgery.

He was named MCG's fourth president in 1972 and embarked on a mission of expanding MCG's student body and physical plant. During his tenure, the number of MCG graduates almost doubled, and more than $25 million in renovations and new construction were completed. Those additions included the Sydenstricker wing of the MCG Hospital; the Carl T. Sanders Research and Education Building; a radiation therapy center; enlarged hospital surgical suites; and expansion of the library.

He oversaw organization of the MCG Research Institute, which aids researchers in the search for funding, in 1981.

He stepped down from the presidency in 1982 and was named professor emeritus of surgery by the University System of Georgia Board of Regents in 1984.

Dr. Moretz was former vice chairman of the American Board of Surgery, a fellow of the American College of Surgeons and a member of the Society of University Surgeons and the American Surgical Association. He was a former president of the Southeastern Surgical Society, the Georgia chapter of the American College of Surgeons and the Georgia Surgical Society.

He was honored by the American College of Surgeons for a teaching film he co-authored. He was presented a Distinguished Service award in 1967 by the University of North Carolina Medical Association. The Moretz Surgical Society, established in 1972, was named in his honor to promote the exchange of scientific research and observation by surgeons affiliated with MCG who worked under Dr. Moretz when he was chairman of the department.

Dr. Moretz is survived by his wife, Laura, and their six children and 11 grandchildren. ■

Homecoming Scheduled May 3-6

Editor's Note

Here is a list of Homecoming activities for MCG's five schools. Homecoming will be held May 3-6. A list of School of Nursing Homecoming activities was inadvertently omitted from the winter 1990 edition of AlumNews. We regret the omission.

For All Schools

Registration, 9 a.m. to 2 p.m. May 3, 9 a.m. to 6 p.m. May 4 and 9 a.m. to 4:30 p.m. May 5 at the MCG Alumni Center, 919 15th Street. All alumni, including those who have pre-registered, should stop by the center to check on reservations and pick up name tags, packets and Homecoming

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Renovation of Old MCG Almost Complete

Renovation of the Old Medical College is scheduled for completion by July 1, according to Dr. James B. Osborne, vice president for university advancement at the Medical College of Georgia.

"This is going to be a magnificent building," Dr. Osborne said. "It will be very important to the restoration of downtown Augusta, which will help impact the economy."

The building, which is leased to the MCG Foundation by the Academy of Richmond County, also will serve as a proud reminder of the roots of MCG alumni, said Dr. Francis J. Tedesco, president of MCG. "This building represents our heritage–that of every alumnus of the Medical College of Georgia," Dr. Tedesco said.

Renovation will cost about $2 million. Plans call for adapting the 155-year-old building for use as a continuing education center while preserving its integrity as a historical landmark. Such MCG functions as homecoming and reunion dinners, alumni gatherings and official ceremonies with students and faculty will occur in the building.

The building also will be reserved for community and statewide functions, including cultural events, social affairs, dances, banquets and weddings.

"The ambiance of an evening in the building will be long remembered," Dr. Tedesco said. "We feel that business groups, local medical programs, the many civic and professional societies will be proud to gather in this setting."

The first floor will accommodate large conferences and seminars, with space for up to 300 people in the main room and 100 in the solarium. The theater on the second floor can hold approximately 150 people and will be used both as a classroom and for various public performances such as plays and concerts. The second floor also contains rooms for conferences, seminars and entertaining.

Medical history displays will be placed throughout the building to underscore its role as a monument to MCG's contributions to health science.

Renovation will restore the building to its original appearance.

The building also is undergoing rewiring, replumbing and installation of sprinklers, new air-conditioning and heating and audio-visual systems. Other improvements include new wood floors, wall repairs, new light fixtures, new stairs, elevator, reopening of the rotunda, renovation of kitchens, new roof and guttering, new stucco and exterior water-proofing, paving and landscaping of the parking area.

Work has progressed in two phases. Phase One, the planning stage, began in 1988 and has concluded. Phase Two is the construction phase. The foundation has secured a $1.6 million loan for Phase Two, and fund-raising for the project is

ongoing.

"We have a three-pronged thrust for raising money for this phase," Dr. Osborne said. "The first two prongs are a physician steering committee and a corporate steering committee in Augusta, which are operational and functional. At the same time, we're developing a statewide structure involving selected leaders in the physician community."

Dr. Chenault W. Hailey (class of '56), chairman of the MCG Foundation, and Dr. William C. Collins ('62), president of the MCG School of Medicine Alumni Association, have helped identify leadership throughout the state to help support the project. Physician leaders have been named in cities including Dalton, Gainesville, Macon, Rome and St. Simons Island. Leadership posts will soon be established in Albany, Atlanta, Savannah and other sites.

Dr. Harold S. Engler ('50) of Augusta is chairman of the Augusta area physician steering committee. Committee members are Dr. James W. Bennett, Dr. A. Bleakley Chandler, Dr. Lois T. Ellison, Ronald G. Fenchak, George H. Foster, Mrs. Robert S. (Jana) Hill, Bruce L. Howerton, Dr. Louis O.J. Manganiello, Dr. William B. Mullins, Dr. Osborne, Dr. Carol G. Pryor and Dr. Joseph M. Still.

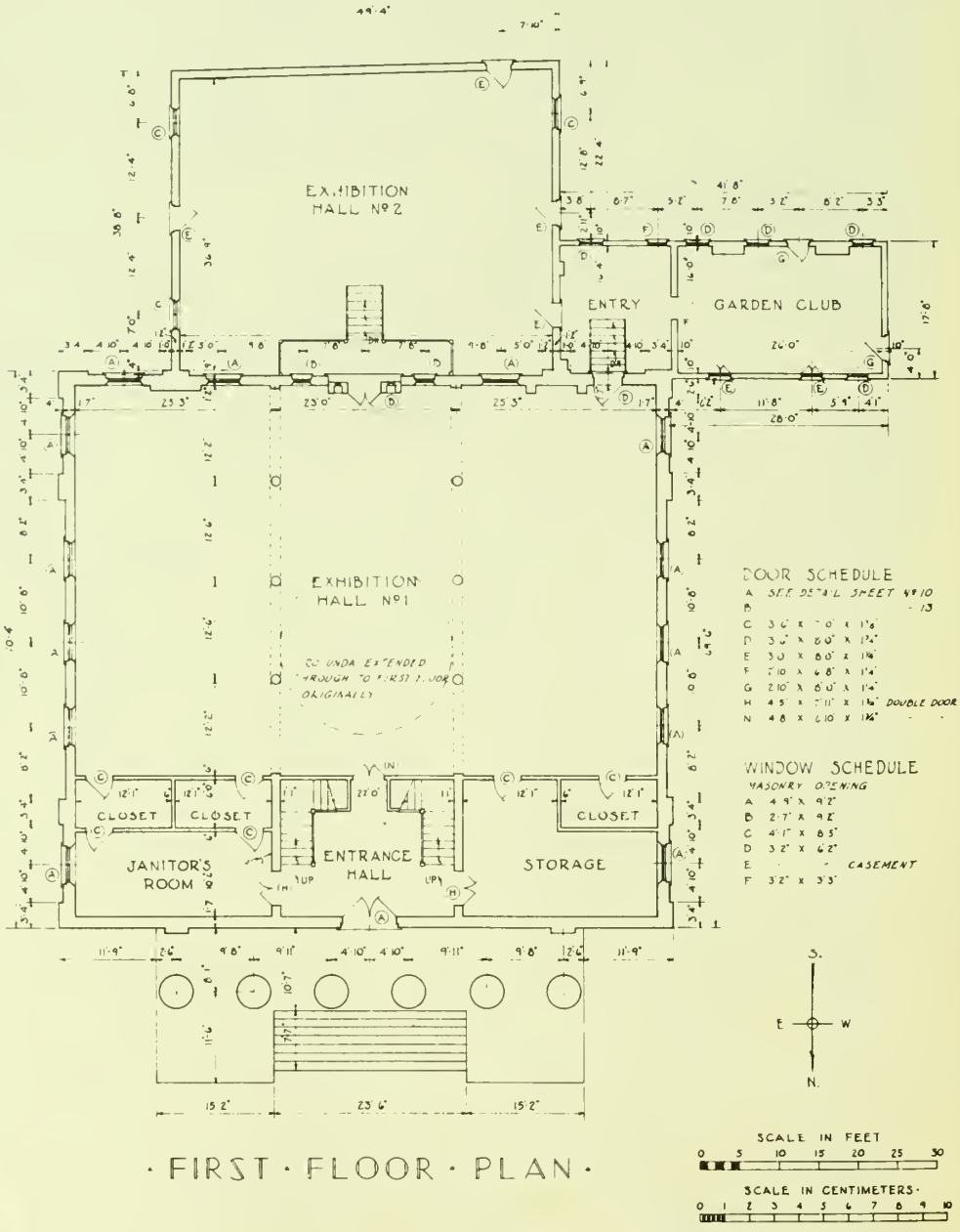
Herbert S. Upton, president of Upton Management in Augusta, is chairman of the Augusta corporate steering committee. Committee members are Randolph L. Burnette, president of J.B. White; David L. Burton, city president of First Atlanta Bank; D. Hugh Connolly, president of Sherman and Hemstreet; Lee W. Curley, senior vice president and branch manager of Robinson-Humphrey; John C. Hagler III, past president of Georgia Iron Works; David E. Hudson, attorney with Hull, Towill, Norman, Barrett; Whitney C. O'Keeffe, president of the Trust Company Bank; Abram J. Serotta, president of Serotta, Maddocks & DeVanney; and Bernard M. Silverstein, president of Silverstein Cleaners.

Recognition for four levels of giving also have been established. Donors of $2,500, $10,000, $25,000 and $50,000 will receive special recognition, including their names included on a bronze plaque permanently displayed in the building's foyer.

Examples of support for the project already abound, Dr. Osborne noted. "For example, Drs. Robert and Lois Ellison ('43 and '50) have not only verbally supported the project but have provided a pace-setting gift for Phase Two of the campaign. Drs. Chenault Hailey and Joseph Still ('65) both have donated a pace-setting commitment of $50,000.

"And Jack Hagler and his wife, Mary Ann ('50), have helped connect the project with historical societies around the state who now are rallying around this project as one of the most meaningful in the history of the state."

Professional, civic and private groups already have begun booking the facility. For information about renting the facility, contact Shirley Taylor at (404) 721-2123. For more information about the project, contact Dr. Osborne at (404) 721-4003. ■



· FIRST · FLOOR · PLAN ·

Old MCG Rich in History

The Old Medical College has staked a claim to a noteworthy slice of history.

Great expectations abounded from the day the doors opened 155 years ago.

MCG founder Milton Antony, a doctor from Wilkes County, Ga., never anticipated anything short of excellence when he and colleague Joseph Adams Eve began teaching apprentices in several rooms of Augusta's City Hospital in 1826.

Two years later, Dr. Antony pushed for the charter of a state medical academy in which a bachelor of medicine degree would be awarded after a year of studies. On Dec. 20, 1828, Gov. John Forsyth signed the charter. The school opened on Oct. 1, 1829, with seven students. It is the third oldest medical college in the Southeast and the eleventh oldest in the United States.

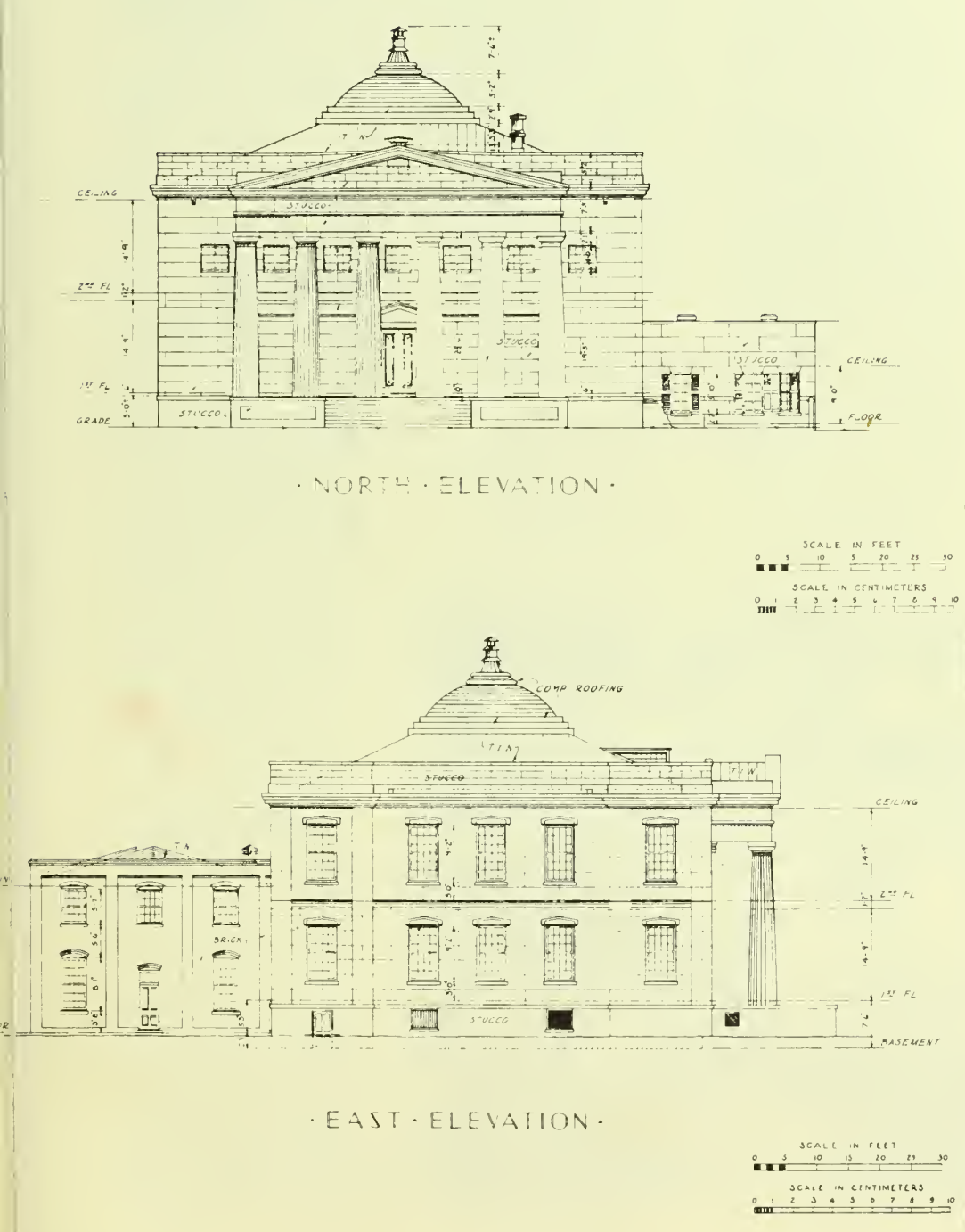
In 1835, the school moved from its City Hospital classrooms into its home on Telfair Street. The land was leased from the Academy of Richmond County. The plans were drafted by architect Charles B. Cluskey, a professional with formal training, which was rare at a time when most American builders were gentleman architects. Mr. Cluskey's work includes plans submitted to the U.S. Senate in 1856 for the renovation of the Capitol and the White House. His most noteworthy recommendation concerned the dome of the Capitol and was carried out in detail. Some of his suggestions for the White House were implemented as well.

Today, the Old Medical College is referred to as the finest expression of the Greek Revival in Georgia and is listed on the National Register of Historic Places.

The building served the school well into the Civil War and beyond, but around the turn of the century, the MCG faculty realized it needed to be replaced. The school's downtown location was perennially congested,the growing student body needed more room and the building had fallen into chronic disrepair.

In 1913, MCG moved to the four-story Tuttle-Newton building, formerly the Augusta Orphan Asylum. At that time, the Old Medical College reverted to the Richmond Academy, which held classes in the building between 1914 and 1926. It stood vacant for five years thereafter but was used throughout the 1930s by various civic and social organizations. It housed a U.S.O. canteen during World War II and since 1948, the Old Medical College has been preserved by the Augusta Council of Garden Clubs. The Garden Council has used the building as an activity center for receptions, meetings, luncheons and banquets.

The Medical College of Georgia Foundation decided in 1988 to renovate the building and help preserve the spirit and heritage of the school's original home. The project has been ongoing ever since. ■



Architectural blueprints of the Old Medical College building drawn for the Historic American Buildings Survey of the U.S. Department of the Interior.

Allied Health Sciences

MCG to Produce Blood-Banking Series

David Waller

The Medical College of Georgia Department of Medical Technology and the Division of Continuing Education and Health Communication will produce four videotapes and accompanying learning guides for Ortho Diagnostic Systems.

The videotape series, which will address the specialized field of blood banking, will be used in several different ways. It can be used as part of continuing education for medical technologists or as an update for technologists who wish to return to the work force.

"With the shortage of medical technologists, we decided we needed a way to quickly educate those who wanted to get into blood banking," said Sharon Kutt, assistant professor of medical technology and project co-director.

The tapes will be produced over 18 months and the company will pay the institution $65,000 for exclusive rights.

Ortho, a subsidiary of Johnson and Johnson, manufactures laboratory equipment, diagnostic kits and other materials used in the laboratory.

Dr. Glenn West, assistant director for program development in the Division of Continuing Education, is project co-director and editor. Joyce Larison, blood bank supervisor, is developing much of the content for the series, which will be reviewed by nationally recognized blood-banking authorities.

"Ortho has traditionally been involved in education," Ms. Kutt said. "They had gotten away from that for about 10 years and are just now getting back into it."

The MCG Division of Television Services is producing the videos. ■

Sharon Kutt reviews videotapes with Tom Greene of Television Services.

Externship Program Offered

David Waller

The dental hygiene program in the School of Allied Health Sciences is now offering an externship program to all of its second-year students.

"We want students to see what it is really like in the private sector," said Gail Winkley, acting chairwoman of the Department of Associated Dental Sciences. "We want them to be comfortable there so they will keep working in the profession."

There is a demand for dental hygienists and Ms. Winkley hopes helping graduates make the change from student to professional will make it easier for them to stay in dental hygiene rather than change careers.

Ms. Winkley presented the idea to the American Dental Association's Commission on Dental Accreditation, which endorsed the plan.

The idea was then taken to the Eastern District Dental Society of the Georgia Dental Association, the Augusta Dental Society and the Dental Hygiene Liaison Committee. These three groups recommended dentists in the area who would be good participants.

The pilot test program was very successful, according to the participating dentists and students. Both groups were involved in evaluating the program and the performance of each student.

The three-week program will be offered in spring 1990 and students will receive four quarter hours of credit for participating. The MCG program will be the first dental hygiene program in the country to offer an externship. ■

Health Information Technology Program Slated

David Waller

The Health Information Management Department in the School of Allied Health Sciences will offer an associate's degree in health information technology beginning fall quarter.

"There have been recent studies showing a need for people in this area," said Dr. Charlotte Johnston, chairwoman of the Department of Health Information Management.

Students will take one year of classes at another school and transfer to MCG for the second year. Up to 20 students will be accepted each year.

The MCG program will be the only associate's program in health information technology in Georgia.

"There was a program at Armstrong State College in Savannah, but it closed about three years ago," Dr. Johnston said.

Classes will be offered during the day when the program begins, but Dr. Johnston is hoping to add evening and night classes in

the future so potential students who work during the day can attend.

Other future plans for the department include a proposed program that will allow students with an associate's degree in health information technology to return to school for a bachelor's degree. ■

Flow Cytometry Program Scheduled

David Waller

The Allied Health Sciences Department of Medical Technology Department and the Department of Pathology in the School of Medicine will offer a postgraduate certificate program in flow cytometry beginning fall quarter.

Flow cytometry is a relatively new cell analysis technology which is coming into increasing use in the diagnosis and treatment of a variety of benign and malignant diseases. It is also being applied in microbiology, the study of functions and many other research and industrial settings.

"It is an up-and-coming technology," said Sharon Kutt, assistant professor of medical technology. "It will eventually reach into every area of the clinical laboratory."

The program will only be available to students with a bachelor's degree in medical technology. Joe Martinez, flow cytometry specialist in the Department of Pathology, will serve as program director. Dr. William Allsbrook, director of the flow cytometry laboratory, will serve as medical director of the program.

The program will be the only university-based flow cytometry training program in the United States.

The program will accept two students in fall and spring quarters and more students will be accepted as space and instrument availability allows. ■

Two Chairwomen Appointed

Two new chairwomen were appointed in the Medical College of Georgia School of Allied Health Sciences in December.

Dr. Charlotte A. Johnston is chairwoman of the Department of Health Information Management and Dr. Julia R. Crowley is chairwoman of the Department of Medical Technology.

Dr. Johnston replaces Becky Davenport, who retired in 1989.

Dr. Johnston came to MCG in 1964 as an instructor of medical record science. She left MCG in 1970 to work as a medical record consultant for a group of 22 hospitals and eight nursing homes.

In 1981, Dr. Johnston returned to MCG as an assistant professor and in 1985 was promoted to associate professor.

Dr. Johnston earned her doctorate in educational administration from Georgia State University.

As a member of the American Medical Record Association, Dr. Johnston has served as chairwoman of the Research and Development Committee.

Dr. Johnston also is a member of the Georgia Medical Record Association, for which she has served as president, vice president and chairwoman of the Educational Committee.

Dr. Crowley replaces Ann Anderson, who retired in 1988.

Dr. Crowley came to MCG in 1973 as a technologist in the microbiology laboratory. She became an instructor of medical technology a year later. In 1977, Dr. Crowley was promoted to assistant professor and five years later to associate professor.

Dr. Crowley earned her doctorate in education from the University of Georgia and in 1987 was promoted to full professor.

As a member of the American Society for Medical Technology, Dr. Crowley has served as chairwoman of several committees.

She also is a member of the Georgia Society for Medical Technology, the Georgia Society of Allied Health Professionals and the American Society for Microbiology.

Dr. Crowley also serves on the review board and as consulting editor of "Clinical Laboratory Science." ■

Four Join Faculty

Four new faculty members have been appointed in the School of Allied Health Sciences at the Medical College of Georgia since November.

Silvia M. Bolmey has been appointed instructor and clinical coordinator in the Department of Physician Assistant.

Ms. Bolmey earned a bachelor's degree in biology from Northwestern University and a bachelor's degree in physician assistant from the University of Alabama in 1974.

Since becoming a physician assistant, Ms. Bolmey has worked at several medical centers across the country and in Korea. Most recently, Ms. Bolmey worked in the emergency department at Los Angeles County University of Southern California Medical Center.

Ms. Bolmey is a member of the American Academy of Physician Assistants, the California Academy of Physician Assistants, the American Public Health Association and the National Council for International Health.

William W. Parham has been appointed instructor in the Department of Physician Assistant.

Mr. Parham earned an associate's degree in nursing from South Georgia College and a bachelor's degree from the physician assistant program at MCG.

Before being appointed instructor, Mr. Parham was a senior staff nurse at MCG.

Mr. Parham is a member of the American Academy of Physician Assistants and the Georgia Association of Physician Assistants.

Cynthia Phillips has been appointed instructor in the Department of Respiratory Therapy.

Ms. Phillips earned an associate's degree in the visual arts from Brewton Parker College and a bachelor's degree in respiratory therapy from MCG. She is working on a master's degree in business administration at Augusta College.

Ms. Phillips was previously appointed clinical instructor of respiratory therapy at MCG. She is a member of National Board of Respiratory Care.

Troy L. Stone has been appointed instructor in the Department of Associated Dental Sciences.

Ms. Stone earned her associate's degree in science from Abraham Baldwin Agricultural College, a bachelor's degree in dental hygiene from MCG and a master's degree in health education, also from MCG.

In the past four years, Ms. Stone has worked for dentists in Georgia. She has also been involved in several research projects for MCG.

Ms. Stone is a member of the Central Savannah River Area Dental Hygiene Society, the Georgia Dental Hygienist Association and the American Dental Hygienist Association. ■

Class Notes

Pamela Kaminski ('83), Charleston, S.C., earned a doctor of dental medicine degree from the Medical University of South Carolina in 1989 and practices general dentistry in Charleston. She was the 1989 recipient of the American Academy of Oral Pathology award.

Andrea L. Townsend ('83), Chamblee, Ga., recently began work as a physician assistant at Henrietta Egleston Memorial Hospital in Atlanta. She is working in pediatrics. ■

Dentistry

Hygienists Need Formal Training, Dr. Goldstein Says

Ingrid Heggoy

Proposed Georgia legislation that would allow dental hygienists to forgo formal training would be a giant step back for dentistry, according to Dr. Marvin Goldstein.

Rep. Ward Edwards, D-Butler, sponsored a bill which would allow dentists to provide on-the-job training for hygienists. But he asked in January that it be sent back to committee, so the bill is dead for the 1990 legislative session.

Dr. Goldstein hopes it stays that way.

"I think this (House Bill 200) would be a giant step backwards," he said. "Dental hygienists go through school; they are trained professionals. Dentists who are behind this bill are not giving enough long-term thought to their profession."

Dr. Goldstein made his comments at the Medical College of Georgia School of Dentistry while in Augusta for the 12th Annual Marvin Goldstein Lectureship.

"This bill would allow hygienists to be trained just in the dentist's office, with no formal training at all," he said. "At first, many dentists were behind this bill because of a shortage of hygienists, but the schools are gearing up and the situation will improve.

"I think we need to honestly look at what's best for the profession and the community in the long run."

Dr. Goldstein has a private practice in orthodontics in Atlanta. He specializes in adult orthodontics, a field in which he is a world-renowned authority.

He is a clinical instructor of orthodontics at the dental school and one of the school's staunchest supporters, although he graduated from Emory University's dental school. He began the Goldstein lecture series, for which he provides an endowment, and funds a chair in cranio-facial disorders and treatment.

"I guess I became interested in MCG when the School of Dentistry was just being formed," he said. "I got to know Dr. (Judson C.) Hickey (founding dean of the dental school) many years ago. I met him when he came to Georgia to organize this dental school, and our friendship evolved from there."

Dr. Hickey asked Dr. Goldstein to become a clinical instructor in orthodontics more than 15 years ago. He still lectures graduate orthodontics students, and the orthodontic treatment clinic is named in his honor.

"I saw what was happening here and felt that they were doing such a good job that I suggested the lectureship to Dr. Hickey," he said. "That got me even more involved, and most recently I became interested in funding a chair in cranio-facial disorders and treatment.

"I think the need for the MCG School of Dentistry is stronger than ever, especially with Emory having discontinued its dental school. Under the leadership of my friend, Dr. Jud Hickey, the school became and continues to be one of the leading dental schools in the world." ■

Dr. Francis J. Tedesco and his wife, Luann, chat with Dr. David Myers during a reception earlier this year welcoming Dr. Myers as the dental school's new dean.

Endodontics More Specialized Than Ever

Ingrid Heggoy

Endodontists are asked to take the most complicated root canal cases, but many of the routine ones are being performed by other dentists, according to Dr. Noah Chivian.

"We're becoming 'retreato-dontists'," he said. "We're there for the difficult cases, of course, but the majority of root canals are being done by restorative dentists and general dentists.

"Today we're able to do so much more than we could before. That means we get called to do more and more difficult cases."

Dr. Chivian spoke at the Medical College of Georgia School of Dentistry Jan. 26 for the 12th Annual Marvin Goldstein Lectureship. Over 200 Georgia dentists attended the lecture, titled "New Wave Endodontics."

Dr. Chivian discussed the changing concepts, techniques and instrumentation caused by technological advances in endodontics. He lectured on basic root canal therapy and how integrating clinical experience with technological advances allows dentists to make treatment decisions. He also discussed new innovations in hand, mechanical, sonic and ultrasonic dental instruments.

Dr. Chivian is a nationally known endodontics lecturer. He received his dental degree from the University of Pennsylvania School of Dental Medicine and his certificate in endodontics from Temple University School of Dentistry.

The lecture series is sponsored by Dr. Marvin Goldstein, an Atlanta orthodontist. Each year the Goldstein Lectureship features nationally and internationally known clinicians, at no charge to the dentists attending the workship. ■

Students Lauded During Clinic Day

Ingrid Heggoy

Junior dental student Gene Beall won first place in the Medical College of Georgia School of Dentistry Student Clinic Day table clinic presentations Jan. 31.

Mr. Beall will present his table clinic on the effective disinfection of an impression material commonly used to construct crown and bridge appliances at the American Dental Association meeting in Boston in October.

Sophomore Robert Cudea placed second with a presentation on the reaction of the disk in the jaw joint to inflammation and junior Mark Smith placed third with a presentation on the effect of certain drugs on animals when exposed to an unpleasant stimulus. Winners for dental hygiene were: first place, Linda Jobe and Fayette McDonald; second place, Keith Moody and Emmanuel Ngoh; and third place, Donna Painter and Wendy Gregg.

On a lighter note, the

Student Clinic Day

senior class won the amalgam relay, in which teams from each class and one representing the faculty competed to fill a cavity in a model of a mouth in under two minutes.

The junior team won the Daring Denture Set-Up relay arranging teeth for dentures, and senior Joe Morabit won the Wacky Wax-Up, a freestyle wax sculpting contest.

Guest speaker for the day was Dr. Ed Hershaft, a forensic dentist from the Medical University of South Carolina. He discussed applying dental knowledge to help solve civic and criminal cases and to identify crime or accident victims. ■

Patients Must Come First, Dentist Declares

Ingrid Heggoy

The main concern of insurance companies is profit, not patients, according to the president of the Georgia Dental Association.

"The sad truth is that the insurance game is a business, not a determination of what's best for the patient," Dr. Paul Eliazer, an endodontist from Albany, Ga., said at a Jan. 10 speech at the Medical College of Georgia. "Those people are interested in profit. You are interested in your patient."

Dr. Eliazer spoke to about 75 first- and second-year dental students at a luncheon sponsored by the GDA.

Dental insurance has helped many who would not otherwise be able to afford dental treatment, he said, but there are disadvantages.

"Insurance companies now want to dictate fees, and equally important, they want to dictate what treatment is provided. We've gone through this educational process to be able to determine what treatment is best in each patient's situation, we present that to the patient, and they, the patient, should decide," he said.

Dr. Eliazer also stressed to the students the importance of joining the American Dental Association and the Georgia Dental Association when they graduate, and joining the American Student Dental Association now.

Professional membership is an obligation for professionals, he said, and part of the definition of professionalism is a relationship with peers to share knowledge. And dentists need an organization to communicate their position on issues, he said.

"We have no other voice to communicate as a profession," Dr. Eliazer said. "To be effective, we need a unified voice."

He also discussed the services the GDA provides for dentists, such as a patient referral service, information on starting in practice, state and national representation, patient educational materials and a library of information for dentists. ■

Student Scores Outshine National Average

The Medical College of Georgia's 48 dental school seniors passed the National Boards Examination Part Two in January with the average score above the

national average.

Georgia dental students must pass the exam before taking a licensing test. The average MCG score was 87.34, the highest for MCG dental students in 15 years. The national average is 85.

The test is composed of sections in operative dentistry, pharmacology, prosthodontics, oral surgery, orthodontics/pedodontics, oral pathology/radiology and endodontics/periodontics. The students' overall score is an average of these individual scores. On the individual exams, 38 students scored 90 or above, and three students scored one or more 99s.

Students take the National Boards Part One after the second year of dental school, which they must pass to take part two during their senior year. ■

Dr. Fairhurst Awarded MERIT Grant

Dr. Carl Fairhurst, a Regents professor in the Department of Restorative Dentistry at the Medical College of Georgia School of Dentistry, has received a grant from the National Institutes of Health for up to $2,050,000 over 10 years.

Dr. Fairhurst is studying the porcelain/metal dental materials used to create natural-looking crowns for dental patients.

Dr. Fairhurst received a grant worth more than $1 million over five years for his research. In addition, the NIH awarded him a Method to Extend Research in Time (MERIT) award in recognition of his research. This award continues his grant for an additional three to five years without reapplying.

Dr. Fairhurst has researched dental porcelain-metal systems for approximately 15 years. The current research will look at the expected lifetime of these materials in a patient's mouth. Although only about 5 percent of these crowns break, this percentage accounts for $100 million in dental expenses each year in the United States.

Later in the study, Dr. Fairhurst hopes to develop some new alloys in the porcelain/metal materials to prolong the lifetime of these products. ■

Dr. Pashley Wins Research Award

Dr. David Pashley, a Regents professor of oral biology in the Medical College of Georgia School of Dentistry, is this year's recipient of the pulp biology research award from the International Association of Dental Research.

Pulp biology includes the study of tooth development, tooth self-repair, tooth pain, blood vessels in teeth and similar areas.

Dr. Pashley was recognized for his research contributions throughout his career. ■

Two Join Dental Faculty

Two new faculty members have joined the School of Dentistry since December.

Dr. Michael Hall joined the Department of Oral Pathology as an assistant professor in January, and Dr. Michael Shrout began as an assistant professor in the Department of Oral Diagnosis and Patient Services in December.

Dr. Hall earned a bachelor of science degree from the University of North Dakota and a doctor of dental science degree from the University of Oklahoma College of Dentistry. Before coming to MCG, he taught at the University of Saskatchewan College of Dentistry.

Dr. Shrout earned a bachelor of science degree from the University of Tulsa and a doctor of dental medicine degree from the Washington University School of Dental Medicine in St. Louis, where he taught for seven years before coming to MCG. ■

Dr. Comer Named Associate Dean

Dr. Robert Comer has been named associate dean for patient services at the Medical College of Georgia School of Dentistry.

Dr. Comer, who has taught at MCG for three years, has served as chairman of the MCG Department of Oral Diagnosis and Patient Services since 1988.

A native of Charleston, S.C., Dr. Comer received his doctor of dental medicine degree from the College of Dental Medicine at the Medical University of South Carolina. He earned a master's in business administration from the University of Georgia and a bachelor's degree in mathematics from Clemson University.

Before coming to MCG, Dr. Comer was an associate professor of restorative dentistry at the University of Mississippi School of Dentistry. ■

Dr. Germane Named Chairman

Dr. Nicholas Germane has been appointed chairman of the Department of Orthodontics at the Medical College of Georgia School of Dentistry.

Dr. Germane will begin his duties as chairman July 1. Currently, he is an assistant professor and director of the undergraduate orthodontic program at Virginia Commonwealth University/Medical College of Virginia School of Dentistry, where he has taught since 1983. He was the school's acting chairman of the Department of Orthodontics from 1986 to 1987.

Dr. Germane earned a bachelor's degree in chemistry from St. Peter's College in Jersey City, N.J., and a master's in chemistry from Stevens Institute of Technology in Hoboken, N.J.

He received his doctor of dental medicine degree from the University of Louisville School of Dentistry, where he also earned a certificate in orthodontics. He is now completing requirements to earn a Ph.D. in biostatistics from Virginia Commonwealth University. ■

12 Part-Time Instructors Named

Twelve dentists have been appointed part-time clinical instructors at the Medical College of Georgia School of Dentistry.

In these new positions, the instructors will work with dental students at the school two days a month. The positions were created to allow students to work with a greater number of practicing dentists and to allow full-time faculty additional time for research.

The faculty members and their departments are: Drs. Charles Hall, Thomas Poole and Ted Oellerich, Department of Prosthodontics; Drs. Ann Sabatino and Kathy Smith, Department of Restorative Dentistry; Dr. Nicholas Powell, Department of Periodontics; Drs. Glenn Alex, Verna Diver and Richard Waters, Department of Oral Diagnosis and Patient Services; and Drs. Bruce Beckham and Neil Melcher, Department of Endodontics. ■

Graduate Studies

Research-Economy Link Growing

Christine Hurley Deriso

Graduate schools of health sciences universities nationwide must respond to an enhanced commitment to research, according to Dr. Lowell M. Greenbaum, dean of the Medical College of Georgia School of Graduate Studies and vice president for research.

That commitment stems largely from a growing realization that research is a boon to economic growth, Dr. Greenbaum said in a speech at the 29th annual Council of Graduate Schools meeting Nov. 28 in Washington.

"Our graduate schools are faced with a surprising new challenge—surprising because of the general agreement of its importance to our state and federal governments. The challenge is the concept that economic growth is tied to technology transfer coming out of the universities," he said.

The business world has discovered that the United States is the international leader in the health care and health sciences industry, he said. Institutions nationwide are responding by bolstering research.

"Most institutions have been challenged by their administration in that faculty of all schools, whether they have research experience or not, are now expected to become research-oriented and to enhance research productivity and the economic growth of the state," Dr. Greenbaum said.

The role of graduate schools in attaining this goal is to help sister schools realize their research potential, he said. "Graduate schools in health science centers must interact as vigorously as they can with our sister schools—medicine, dentistry, allied health sciences and nursing—in order to disseminate academic excellence and to support programs which provide added strength to these disciplines," he said.

MCG already is well on its way, he said. Twenty of its School of Dentistry faculty, for example, have Ph.D. degrees. Its School of Nursing has a Center for Nursing Research; the National Center for Nursing Research has allocated some $32 million for research programs and training.

But much work has yet to be done. "Graduate programs for the health care professions are rapidly changing," Dr. Greenbaum said. "These changes are going to particularly affect the biomedical sciences because of the increasing demands of the faculties and administrators to develop research skills in the biomedical area despite much different backgrounds to education than was the rule."

Individualized curriculums and part-time research programs in the biomedical field must be developed to facilitate more research-oriented graduates, he said. "If graduate schools can accomplish this, they will be in a great position in the health sciences to command greater resources, a greater place in the sun and have the satisfaction of seeing students from all faculties seeding research programs and providing the needed expertise that is so in demand by our health care colleagues," Dr. Greenbaum said. ■

Dr. Mahesh Awarded NIH Grant

Christine Hurley Deriso

Dr. Virendra B. Mahesh, chairman of the Department of Physiology and Endocrinology at the Medical College of Georgia, has been awarded a $639,000 grant to research ovarian cells.

The four-year National

Dr. Lowell Greenbaum works in laboratory.

Institutes of Health grant was awarded in December in response to a recent discovery by Dr. Mahesh and his colleagues, Drs. William Allsbrook, Thomas Mills and I.M. Rao.

The discovery resulted from their study of ovarian follicles which grow and mature during the ovulation cycle. Ovarian follicles secrete steroid hormones. The follicles contain cells called granulosa which are vital to the hormone-secreting process.

"The fate of follicles—whether they continue to grow and mature—depends largely on the number of granulosa cells and what those cells do in the production of steroids," Dr. Mahesh said.

The MCG researchers found that the granulosa cells appear in two distinct sizes—small and large. The grant will fund their research into the reason for the two sizes and the function of each.

"The focus of the study will be not only to find out what the cells do, but to study what controls their growth and differentiation," Dr. Mahesh said.

The answers to these questions will shed light not only on follicular development but on the entire ovulation process, Dr. Mahesh said. "Only fully mature follicles can ovulate," he said.

The research may ultimately help those who don't ovulate normally because of improper follicular development and thus have infertility problems, he said. ■

Emotional Toll of AIDS Explored

Christine Hurley Deriso

AIDS patients endure their bodies' betrayal on a daily basis. Is it possible under such circumstances to sustain emotional health?

Lou Gramling, a student in the Medical College of Georgia School of Graduate Studies, interviewed some three dozen AIDS patients to find out.

Ms. Gramling, who is earning a Ph.D. in nursing, has researched the subject under the supervision of Dr. Nancy McCain, acting chairman of mental health/psychiatrist nursing. She discussed their findings at the Jan. 30 "MCG Research Reports," a monthly research forum sponsored by the School of Graduate Studies. The topic was AIDS research.

"We are trying to understand the emotional aspects of AIDS and develop an instrument to measure (AIDS patients') stress and coping techniques," Ms. Gramling said.

She divided the emotional toll of AIDS into three categories, based on her interviews. The first stage, "living with dying," unfolds as patients learn they have the disease. Denial is a common reaction, she learned.

Anger and guilt are also predominant emotions. "One of the first things I thought about was, 'How many people have I killed?'" Ms. Gramling quoted one patient as saying.

Once patients digest and accept the diagnosis, they move into the second stage, "fighting the sickness." At this point, Ms. Gramling said, patients devote themselves to taking the best possible care of themselves, fighting the disease with all their might.

"All this has made me want to get on the horse and ride it all the harder," one patient said.

AIDS patients also try to maintain as much normalcy as possible during this period, Ms. Gramling noted. "I try to bury myself in my work," one said.

The third and final stage is "getting worn out." At this point, physical emotional resources are running perilously low. AIDS patients often look beyond themselves for emotional sustenance. Coping strategies include reliance on family, religion and sometimes alcohol and other drugs.

"I push myself hard to get past the point where I've lost so much ground," one patient said.

Now that the researchers have gained more understanding of AIDS' emotional toll, they will turn their attention to helping relieve it, Ms. Gramling said. ■

Nine Named to Graduate Faculty

Nine MCG faculty were appointed to the graduate faculty in December. Graduate faculty are chosen from faculty in MCG's schools of Allied Health Sciences, Dentistry, Medicine and Nursing. They retain their primary appointments in those schools.

The new graduate faculty are Dr. Laura C. Daniell, Dr. Stephen R. Ikeda, Dr. Abdullah Kutlar, Sharon M. Kutt, Dr. Patricia P. Lillis, Dr. Nancy C. Lovejoy, Dr. Arlene Lowenstein, Dr. Jolene M.P. Simon and Dr. Lore K. Wright.

Dr. Daniell, assistant professor of pharmacology and toxicology, earned a Ph.D. in pharmacology and toxicology at the University of Texas at Austin. She joined MCG in 1988 and is a member of the Society for Neuroscience and the American Association of the Advancement of Science.

Dr. Ikeda, assistant professor of pharmacology and toxicology, earned a Ph.D. in pharmacology from the University of Maryland School of Medicine. He joined MCG in 1988 and is a member of the Society for Neuroscience and the Georgia affiliate of the American Heart Association.

Dr. Kutlar, associate professor of cell and molecular biology, earned his medical degree from the Ankara University Medical School in Turkey. He joined MCG in 1984 and was a 1989 member of the National Institutes of Health Ad Hoc Committee on Newborn Screening.

Sharon Kutt, assistant professor of medical technology, earned a master's degree in medical technology from MCG and joined the faculty in 1986. She is chairwoman of the Allied Health Sciences Student Affairs Committtee and the Medical Technology Admissions Committee at MCG. She is a student in the University of Georgia Ed.D. program in adult education.

Dr. Lillis, associate professor of adult nursing, earned a doctorate in adult health from the University of Alabama at Birmingham. She joined MCG in 1979 and has coordinated courses in oncology and critical care.

Dr. Lovejoy, associate professor of adult nursing, earned a doctorate in nursing from the University of Alabama in Birmingham and joined MCG in 1989. She is a member of Sigma Theta Tau, the Oncology Nursing Society and the International AIDS Society.

Dr. Lowenstein, associate professor and chairwoman of the Department of Nursing Administration, earned a master's degree in parent-child nursing from New York University and a Ph.D. in higher education administration from the University of Pittsburgh. Before joining MCG in 1985, she was assistant professor of the graduate program in nursing administration at the University of Pittsburgh School of Nursing.

Dr. Simon, assistant professor of adult nursing, earned a Ph.D. in research and adult health nursing from the University of Texas. She joined MCG in 1988 and developed an undergraduate oncology nursing elective.

Dr. Wright, assistant professor of mental health-psychiatric nursing, earned a master's degree in adult psychiatric/mental health nursing from Wayne State University in Detroit and a Ph.D. in sociology from the University of Georgia. She joined MCG in 1980 and is a scientist for the School of Nursing Center for Nursing Research. ■

Alumnus Recalls Decades of Memories

Toni Baker

When Dr. Theodore M. Yates dissects his memories of turn-of-the-century life at the Medical College of Georgia he uncovers vivid memories of anatomy.

He remembers being among a freshman class of 32 students and being told by the anatomy instructor that they were kidding themselves if they thought they'd graduate.

"We were pretty much depressed," said Dr. Yates, a 95-year-old urologist and MCG's oldest living graduate.

But Dr. Yates says he never thought about giving up.

"I thought about getting kicked out," he said.

"Gross anatomy was our first hurdle, and we were all 'running scared,' (if that expression was known then), and especially after our first (osteology) exam," Dr. Yates wrote in his memoirs.

"The tremendous amount of memory work discouraged us, the pounding away on us by the head of the anatomy department that we were deluding ourselves if we thought we would pass his work and that we were mistaken from the first thinking we had it in us to be a physician," he wrote.

"All this took its toll on our numbers and every week or so one of our numbers would decide that the professor was right and that we might as well go back home."

He remembers the drafty, cold dissecting room where the students learned firsthand the intricate details of the human body.

"The dissecting hall was open all night. All of us worked to midnight and sometimes beyond trying to memorize 'Cunningham,' the 3-inch thick anatomy book, and to reconcile what (the professor) had described and what we had exposed, and possibly destroyed, in our dissecting.

"Finally, probably from pure tiredness of looking at our part of the 'stiff,' one by one we would decide we were ready for our practical and in fear, half sick from loss of sleep and hopelessness, would tell the professor we were ready," he wrote.

The instructor would sit on a high stool, look down on the students' work, give a scornful grunt and ask questions.

"The question was usually phrased, to describe such and such a nerve, artery or vein and we would start telling all that we could remember about that particular structure. When we were finished there was never any indication of how well or how poorly we had done.

"We would have told all we knew, even tracing along the particular artery, etc., and its branches and down over the threads we had substituted for the part we had accidently removed in exposing it.

"Then would come the invariable question, quite upsetting: 'Anything else?' Also there was the question in our mind, 'Was he really listening to us at all?' There was a legend that one day one of the examiners asked the same question three times," Dr. Yates wrote.

Dr. Yates had traveled many roads to reach such blissful uncertainty.

His came to this country from England, the 5-month-old child of Salvation Army missionaries who would live in 22 cities in half as many years.

When the family moved to Augusta in 1910, it would be Dr. Yates' last stop with them.

It was in this city that Dr. Yates decided to become a physician. And a widow who had lost her own sons in an accident made it financially possible for him to pursue his goal.

"I suppose it was the idea of the doctor coming into the family to quiet things down and make everybody hopeful," he said of his decision.

He would go to high school at Richmond Academy, then to the University of Georgia and finally to MCG as a member of the class of 1919.

Dr. Theodore Yates

"The sudden opening of the doors to the medical school to me served but to confirm this view to me and no matter how frightened I was, in my innermost being I always felt that all I had to do was to go ahead. I was following a definite lead," he wrote.

As a sophomore he began to realize he just might succeed.

He had a big examination scheduled one day, but a horrible bout with influenza had cost him the preceding week of school. The winter temperature was well below freezing the day of the test, but he made it to school only to learn that the boiler was broken and there was no heat.

But Dr. Yates presented himself to his pathology professor for the exam. The professor berated him for coming to school, wrote down the questions and told him go home, answer them and get back to him when he was well.

"When I started home it suddenly struck me, 'My gracious. He cares whether I die or not.' And the next thing was, 'It looks like I'm going to finish up,'" Dr. Yates said.

He was one of eight to graduate in 1919.

Dr. Yates left Augusta and headed for New York City where he secured an internship in gynecology at the old Roosevelt Hospital,

which provided no stipend, but gave him a place to sleep and food to eat. He gradually moved to the surgical service and went to work in the "accident room."

This early emergency room saw the victims of New York City's crowded streets at a time when traffic was directed by policemen and automobiles were started by cranks. He remembers one day when he saw 11 patients who broke their wrists trying to crank automobiles.

It was at Roosevelt that Dr. Yates would meet a young nursing student —Jean—who would later become his wife of 66 years and the mother of their two children, Dr. Christina Parr and James Yates.

After two and a half years at Roosevelt, Dr. Yates earned the opportunity to help Dr. Wilfred T. Grenfell provide care to fishermen in Labrador, Canada.

He had a 400-mile stretch of frozen terrain to cover twice each year by sled, often staying in the homes of his patients.

Tuberculosis was rampant among the closely knit families. "Living was so congested and if one family had tuberculosis, it was certain to spread to others," he wrote in his memoirs.

After 18 months in the subfreezing climate, Dr. Yates pursued a plan conceived in college to do Presbyterian missionary work in China.

As a student in Athens, he heard a dynamic Baptist minister talk about his missionary work in China. This would plant the seed for a future near-20-year medical mission there for the Presbyterian Church.

In 1923, the Yateses left for China where Dr. Yates worked as a general surgeon, primarily handling urological problems.

Diseases such as kala azar were rampant those days. Kala azar means black fever and its victims turn dark and have a high fever, Dr. Yates said. They typically die from infections. About the time he was leaving China, someone discovered this disease was best fought by destroying sand flies.

His last years in China—1941-43—were spent as a prisoner of the Japanese.

When he was finally freed, Dr. Yates and his wife would take a world tour before the physician signed up for a stint in the U.S. Army.

Then, at 51, figuring it was a little late to start a private practice, he ended up back in Augusta at the Department of Veterans Affairs Medical Center in Augusta before moving on to the VA in Columbia, S.C, as chief of urology.

Wife Jean had heart trouble and a stroke and in the mid-1980s the devoted couple moved to the Presbyterian Home in Summerville, S.C.

"She was in the infirmary. I would sit with her most of the day." Some days he could take her to his room. "She was happy as anything. She was home." The couple was together there for about a year, before Mrs. Yates died.

As he looks back at becoming a physician, he's glad he made the choice. "I don't know what I would have done otherwise. I certainly wouldn't have became a preacher because I'm not an orator."

But as he looks at medicine today, he sees a changed profession that is much more complex. No one doctor can know it all. Tuberculosis and syphilis, two big killers in his day, are no longer major killers.

"It was more simple," he said of the early days. "You'd go in to take care of patients and you'd take care of patients. If you had to call in a surgeon for a special operation, you might do it. But now, it's the right-hand or left-hand doctor," he said. But today's medicine is better for the patient, he said.

"The other thing is everybody is laying for the doctors," Dr. Yates said, pointing to the huge increase in malpractice suits.

In his own life—outside of marrying his wife—he is most proud of his missionary work in China. "I did the most good there. The scope of it." If the Presbyterian Church had not sent the doctors, there would have been none.

These days find MCG's oldest living graduate still walking three miles a day around the Presbyterian Home. Even though he can no longer read or write because of macular degeneration, he still keeps up through the government's talking-book program.

He also has his family and "I've got a lot of memories." ■

"The sudden opening of the doors to the medical school to me served but to confirm this view to me and no matter how frightened I was, in my innermost being I always felt that all I had to do was to go ahead. I was following a definite lead."

Alum's Book Details Obstetrical Crisis

Christine Hurley Deriso

Editor's Note

The following is an article about a book— Society to L&D . . . STAT!— *written by Dr. Murray A. Freedman, a School of Medicine alumnus.*

Dr. Murray A. Freedman found more joy in obstetrics than he ever could have imagined.

And more anxiety than he could bear.

In 1987, the Augusta physician and Medical College of Georgia alumnus made the most wrenching decision of his career: he quit his obstetrics practice.

When Dr. Freedman began his practice in the early '70s, he would never have dreamed that he would voluntarily shut the door on one of the loves of his life—delivering babies—in the prime of his career. Although he still practices gynecology, he misses obstetrics intensely. Why did he give it up?

Dr. Freedman answers the question in a book he wrote called *Society to L&D . . . STAT!* (Marshwinds Publications, copyright 1988.) His anxiety was caused, he relates, by the tidalwave of malpractice litigation in this country. The stress eventually became intolerable.

He is not alone. "Since over 40 percent of my fellow obstetricians in the state of Georgia are either in the process of stopping or have already stopped their OB practice, obviously a rather serious problem exists now," he writes. "Women may soon find it extremely difficult to obtain good obstetrical care if this trend continues."

He attributes the exodus to a judicial system that unfairly victimizes physicians. "In spite of having the best medical care system in the world, there are three times as many medical malpractice suits in the United States as compared with any other country," he writes.

The average U.S. obstetrician is sued eight times in the course of his career. Any time an obstetrician delivers a less-than-perfect baby, a lawsuit may follow—whether he contributed to the defect or not.

"When practicing good medicine is no longer a satisfactory defense against being sued, the physician has been rendered defenseless," he writes. The fact that he daily risks professional and financial ruin, whether

he is at fault or not, results in enormous stress, he said.

How has this situation evolved? For one thing, he asserts, the United States accounts for 6 percent of the world's population but 66 percent of its lawyers. And since they receive contingency fees in lawsuits— a percentage, often as high as 45 percent, of settlements— they have a vested interest in encouraging litigiousness.

Another problem is society's unrealistic expectations of medicine. "The only surgeon who has no complications is a surgeon who does very little or no surgery," he writes. "No matter how good you are, you cannot 'bat 1,000' all the time. No physician is perfect." And even the best physician can't ensure a perfect newborn; many factors are simply beyond his control. But a societal expectation of perfection encourages litigiousness when problems arise.

Yet another factor is juries who are understandably compassionate when confronted with an impaired child and his parents, who are often devastated both emotionally and financially. Jurors often have a limited understanding of medicine and sometimes award compensation without proof that the physician caused the impairment.

"In the absence of negligence ... the physician should not be held responsible for an outcome," Dr. Freedman writes. "Accountability does not imply responsibility."

But society all too often doesn't make this distinction, he says, and everyone pays the price. Droves of obstetricians are abandoning their practices; fewer and fewer people are interested in entering the field in the first place; those who do practice pay astronomical malpractice insurance premiums—costs passed along to patients; and large segments of society are left without obstetrical care or must travel far distances to obtain it.

And health care in general is becoming prohibitively expensive because, in order to protect themselves against lawsuits, many doctors practice 'defensive' medicine, ordering often unnecessary tests just to cover their tracks.

What is the solution? Dr. Freedman advocates creation of a medical malpractice review board—"a knowledgeable panel (which) could impartially review all cases involving 'negligence' without regard to which ones might bring a 'windfall.' It would be a way to evaluate objectively any questionable practice by using a panel of qualified experts (including doctors, lawyers, clergy and business people) who have no personal gain in such proceedings."

The board would recommend dismissal of frivolous or unfounded suits and would encourage just compensation to malpractice victims. Dr. Freedman further suggests that "awards and settlements be determined by knowledgeable people familiar with an established set of standards. (This) would ensure equitable treatment for all injured patients, not just those with megabuck potential."

"In the absence of negligence . . . the physician should not be held responsible for an outcome. Accountability does not imply responsibility."

He also feels lawyers should be paid for services rendered, rather than on a contingency fee. Injured parties then would receive the majority of a settlement, rather than less than a third, which is currently the case.

But regardless of how the situation is resolved, Dr. Freedman is adamant that change is needed. "The true crisis," he writes, "is the quality of your health care in the near future." ■

Dean's Interlude

Dr. Gregory L. Eastwood

How many of us can remember our first day of medical school? I still do. It was a moment of mixed excitement, anxiety, expectation and awe as I sat in the lecture hall and listened to the words of welcome from my dean and several of his colleagues. At last, I was to become a doctor! Never mind that it would require another four years to obtain my degree and many more to attain "real doctor" status. I already felt that I belonged.

The feeling of identity of faculty with students is important to foster in a medical school. We need to understand that once we were there as students and soon the students will be us. I believe that a collegial atmosphere not only is an expression of that identity but it enhances the educational process. Medical school is demanding, our expectations of students are high and students need to know that the faculty are their allies in the process of understanding the human condition and learning how to care for patients.

Over the past several months since my arrival at MCG in late September, I have tried to build on the spirit of collegiality that already was here. It is important for me to know what students and faculty are thinking. To that end, I have established regular meetings with class officers and have met with minority students. I have also shared my thoughts with faculty during various departmental meetings. In January, we began the monthly "Dean's Bullpen," a late-afternoon informal get-together in the Student Center for students and faculty to share ideas and concerns.

I welcome your comments. I look forward to meeting you, either here in Augusta or at one of the alumni functions throughout the state. ■

Class Notes

Dr. Ernest Archie Perry ('43), Clover, S.C., has been honored by the town, in which he has worked as a physician for 43 years. The town council proclaimed Oct. 29 "Dr. Ernest A. Perry Day" and the town's medical complex was renamed the Dr. Ernest A. Perry Medical Building.

Dr. Thomas W. Phillips ('63), Atlanta, has been elected to a fellowship in the American College of Radiology. Dr. Phillips is a radiation oncologist practicing at Crawford Long Hospital of Emory University.

Navy Lt. Cmdr. Kilton D. Kingsman ('81), son of Chester F. and Shirley R. Kingsman of Atlanta, recently reported for duty at the National Naval Medical Center, Bethesda, Md.

Dr. Wiliam C. Lindsay ('81), Knoxville, Tenn., was recently appointed director of the electrophysiology lab at East Tennessee Baptist Hospital in Knoxville.

Dr. Mark J. Eanes ('82), Valdosta, Ga., was named chief of ophthalmology at the South Georgia Medical Center this year.

Dr. Kenneth J. Walker ('84), Warner Robins, Ga., joined the Dan Toland ENT Surgical Associates in July. He and his wife have two sons—Ryan, 5, and Michael, 3. Their third child was due in February.

Dr. Edwin W. Grimsley ('86), Bainbridge, Ga., has a private internal medicine practice. He and his wife, Peggy, have a daughter, Elizabeth, 2.

Obituaries

Dr. Henry G. Stelling Sr. ('40,) Atlanta, died Jan. 29 of pneumonia at his home. He was 82. Dr. Stelling was a general practitioner and a surgeon in Atlanta from 1945 until he became ill and retired in 1971. He interned at University Hospital and did his residency at Piedmont Hospital. He was on the staff of Piedmont Hospital and was a member of the local, state and American medical associations. Survivers include his wife, Elizabeth, two daughters and seven grandchildren. ■

Homecoming... *cont. from pg. 11*

information.

President's Reception, May 4, 4:30 to 6:30 p.m., president's house, 920 Milledge Road. Alumni, residents, interns, faculty and friends of MCG invited.

Homecoming Golf Tournament, May 4, 7:45 a.m. to 1:30 p.m., Jones Creek Golf Club. $60 per player. Alumni, residents, interns and faculty invited. Deadline for entering: April 20. (Entry form is attached to Homecoming brochure.)

MCG Foundation Board Meeting, May 5, 2 p.m., Clarion Telfair Inns, Knox Conference Center.

School of Allied Health Sciences

Alumni Association Breakfast/Annual Meeting, May 4, 8 a.m., MCG Alumni Center. $8.50 per person.

Medical Technology Continuing Education Program, May 4, 8 a.m. to 12:30 p.m., Holiday Inn West. $10 per person. Luncheon will follow at $10 per person.

Dental Hygiene Program, May 4, 8:30 a.m., AD-300.

Physical Therapy Continuing Education Programs, May 5. For more information or to pre-register, contact Dave Rohe or Michael McKeough at 404/721-2141.

Physical Therapy Dinner-Dance for the Classes of 1975, 1980 and 1985, May 5, 7 p.m., Radisson Inn. $25 per person.

School of Dentistry

Class of 1975 Reunion, May 5, 7 p.m., Cotton Row Cafe. $25 per person.

Class of 1980 Reunion, May 4, 7 p.m., Clarion Telfair Inns, Knox Conference Center. $25 per person.

Class of 1985 Reunion, May 4, 7 p.m., Clarion Telfair Inns, Knox Conference Center. $25 per person.

AGD/MCG Lecture and Scholarship Program, May 5, School of Dentistry, room 100. Registration: 8 a.m.

School of Graduate Studies

Alumni Association Luncheon, May 3, noon, Eugene E. Murphey Pathology Building Conference Room. $8 per person or $15 per person if also attending the May 4 reception. Graduate faculty and alumni invited.

Distinguished Alumnus Award Presentation and Lecture, May 3, 2 p.m., Robert B. Greenblatt, M.D. Library, room 108.

Homecoming Reception, May 4, 6-8 p.m., MCG Alumni Center. $8 per person or $15 if also attending the May 3 Graduate Studies Luncheon. Graduate faculty, alumni and students invited. Free for students.

School of Medicine

Primary Care and Family Practice Symposium, April 30-May 5. For more information, contact the Division of Continuing Education at 800/221-6437. (In Georgia, 404/721-3967.)

Dean's Reception, May 4, 2-4 p.m., Eugene E. Murphey Pathology Building Conference Room.

Alumni Banquet, May 4, 7 p.m., Bon Air. $35 per person.

Alumni Association Board of Directors Meeting, May 5, 9 a.m., Clarion Telfair Inns, Knox Conference Center.

Alumni Association Meeting/Luncheon with MCG Foundation, May 5, noon, Clarion Telfair Inns, Knox Conference Center. $12 per person. Free to Alumni Association board members and MCG Foundation board members and their spouses.

Reunions, May 5, 7 p.m. $35 per person. Classes and locations: *Class of 1940,* Perrin Place Guest House Inn; *Class of 1945,* Clarion Telfair Inns; *Class of 1950,* Pinnacle Club; *Class of 1955,* Pinnacle Club; *Class of 1960,* Princess Augusta Riverboat; *Class of 1965,* Sixth at Watkins Restaurant; *Class of 1970,* Augusta Landmark Hotel; *Class of 1975,* Partridge Inn, *Class of 1980,* MCG Alumni Center; *Class of 1985,* Augusta Landmark Hotel.

Dinner for alumni not having a reunion, Sixth at Watkins Restaurant. (Hosted by the Class of 1935.)

Emeritus Club Luncheon, May 6, 11:30 a.m., Alumni Center. $15 per person.

School of Nursing

School of Nursing Alumni Program and Luncheon, May 4, 11 a.m. to 1:30 p.m., Clarion Telfair Inns, Knox Conference Center. $18 per person.

AlumNews

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Alumni! Let us know what's new with you by taking a moment to fill out this form. Also, please send us your curriculum vitae so we can keep your files up-to-date.

Today's date

Name

Phone

School graduated from

Degree Class year

Street address

City State Zip

❑ Check if new address

Present specialty and place of practice or training

Professional news

Personal news (b&w photos welcome)

Please send to : Christine Deriso; Alumni Center FI-100; Medical College of Georgia; Augusta, GA 30912

In the Blink of an Eye

A Medical College of Georgia professor has found a way to make it easier for patients to remember their eye medication: He's enabled them to take it less often. One of the biggest problems for physicians when they prescribe drugs is that patients often simply forget to take them as often as they need to for the treatment to be successful.

Dr. Keith Green, a Regents professor of opthalmology at MCG, has found a new and better way to administer drugs to the eye. Using polymer technology, he has tested new ways to keep more of the drug on the eye longer. Thus, more of it is able to work before being blinked away, so the drug can be used less often.

Traditional eye-drop medications are wiped off the eye with each blink. Ninety-five percent of the medication is gone within 30 seconds, according to Dr. Green. Pharmaceutical companies often add thickening ingredients to the medications in an effort to make them move from the eye more slowly, but this has had little success.

"That medication is wasted," he said. "We needed to find a way to keep the medication in contact with the eye longer so that it has a chance to work."

And Dr. Green has found a way.

He has tested several polymers, or large repeating molecules, that are attracted to the surface of the eye. Drugs are attached to the polymers. When the new medicine is put in the eye, the polymers with the drug form a film on the surface of the eye that can last as long as 10 minutes.

"We're looking at five or 10 minutes retention time instead of 30 seconds," he said. "The longer the drug is in contact with the eye, the more time it has to penetrate the tissue, to do what it is needed for."

This means that the drug can be administered less often, which increases the likelihood that patients will remember it.

"When you're dealing with medicines for the eye, especially any long-term drug treatment, patient compliance is very difficult. One of the big things that research has shown is that it helps to make the drop so that it can be taken less often."

Polymers are large, although still microscopic, molecules. They are made up of repeating units of smaller molecules. They can be made in a wide variety of sizes, and so that the parts that "stick out" from the molecule are spaced as a researcher needs.

The polymers Dr. Green has tested are made to have either a physical or chemical attraction to the eye. The ones he has found most effective are chemically attracted to the surface of the eye, so when the drops are put in the eye, the polymers align themselves over the surface, making a thin film.

These new drops will be effective almost any time a doctor needs to deliver drugs to the eye, according to Dr. Green.

"These will be excellent for long-term treatments, such as for glaucoma," he said. "They'll also be useful for treating almost any type of infection, bacterial or viral, really any time you need to get a drug to the eye."

An added benefit of this new technology is that these medications don't need preservatives, as most drops now available do. Many of the preservatives used to keep the drops sterile can actually damage the eye tissue, a serious concern especially for long-term use.

And the research has immediate practical uses. Dr. Green expects commercially available eye medications using his development to be on the market by the end of the year. ■

—Ingrid Heggoy

Message: Received

The most sophisticated medicine in the world will likely never rival the body's ability to maintain its own good health and to heal itself once injured.

Healthy eyes, for instance, maintain a continuous process of ensuring good vision. And Medical College of Georgia researchers are at the forefront of discovering how.

Dr. Rashid A. Akhtar, associate professor of cell and molecular biology at MCG, is studying the self-maintenance of the cornea. The National Institutes of Health has provided him a $200,000 three-year grant to probe the subject.

His interest was sparked by his discovery that the cornea produces second messengers, molecules produced by cells in response to the release of another chemical. (See *Getting a Grip on Glaucoma*, page 8.) Chemicals that trigger the production of second messengers, called first messengers, are released by nerves. Those chemicals—neurotransmitters, for instance—reach the cell surface and react with receptors that activate enzymes that produce second messengers.

Dr. Akhtar only recently discovered that two second messengers, previously identified elsewhere in the body, also exist in the cornea.

"Our question is, 'What is the function of those second messengers in the cornea?'" Dr. Akhtar said.

One of the second messengers, inositol trisphosphate (IP3), has been proven elsewhere in the body to release calcium stored in cells. Dr. Akhtar theorizes that the same is true in the cornea. "IP3 has been shown in other systems to play this very

Dr. Rashid A. Akhtar

important second-messenger role," he said. "And it might perform a similar function in the cornea."

Calcium helps regulate such functions as enzyme activation, cell division and fluid secretion important for keeping the cornea clear.

Dr. Akhtar theorizes that

How do second messengers affect the cornea? An MCG researcher is finding out.

the other second messenger, diacylglycerol, helps heal wounds.

"When the corneal surface is wounded, the healing process begins immediately by migration of the surrounding cells to the wounded area and then by rapid division of the cells in the corneal surface," he said. "I believe diacylglycerol can play an important role in healing corneal lesions. It can activate a particular enzyme which might facilitate growth and cell proliferation as the wounded cornea repairs itself."

Dr. Akhtar hopes his animal-model studies will substantiate his theories. "If our theories are correct, we can design experiments to manipulate the second messengers. We can enhance their production with certain drugs," he said.

For instance, he will observe the wound-healing process in animal eyes. Once he ascertains that diacylglercerol and IP3 are produced in response to the wound, he will apply drugs that he hopes increase the second messengers' production and thus enhance the wound-healing process.

His findings should shed light not only on the function of the cornea, but on the problems resulting from its dysfunction.

—Christine Hurley Deriso

Lifting the Fog

Consider navigating a leaky boat.

All is well if water is continuously bailed out. If not, the boat sinks.

Such is the case of the cornea, the surface of the eye. A healthy cornea is transparent, allowing light to enter unobstructed. The cornea consists of surrounding cells which pump water out of the interior connective tissue. The fluid nourishes the cornea and maintains transparency. But if the process goes awry—if more water leaks in than is pumped out—the cornea becomes cloudy and obstructs light's passage. Like a waterlogged boat, it ceases to function. Blindness results.

Fortunately, help is available for many people with dysfunctional corneas. Cornea transplantation is a highly successful procedure. (See *Let There Be Light,* page 2.)

But researchers at the Medical College of Georgia would like to take the process one step further.

Drs. Peter Reinach and Robin Socci believe—and their research indicates—that dysfunctional corneas can in some cases be repaired rather than simply replaced. Dr. Reinach, associate professor of physiology and endocrinology, has probed the subject for 12 years. His research, funded by the National Institutes of Health, has centered around one basic concept:

"We need to know how the cornea readjusts," he said. "Sometimes it has more water to bail out, sometimes less." A healthy cornea constantly adapts to the changing conditions and maintains the proper balance.

Research has pointed to the hormone, adrenalin, as a regulator. The hormone signals a chain of events that results in a proper cornea fluid balance. "The hormone hits a receptor which causes a cascade of events," said Dr. Socci, assistant research scientist in the Department of Physiology and Endocrinology.

The researchers want to understand the entire chain of events—a formidable task. "We're making small strides," Dr. Socci said. "Every time we find something new, it starts a new chain of investigation to clarify what we just found and to move on."

They have tested hundreds of drugs and compounds on animal models that might affect the process. If medication can regulate the cornea's fluidity, then damaged corneas can be salvaged and repaired.

One such medication, epinephrine—a hormone produced by the adrenal gland—seems promising. Epinephrine is already used to treat glaucoma, a disease in which excess fluid causes loss of vision. Since epinephrine can control fluidity at the back of the eye, the researchers think it will work at the front—the cornea—also.

"For the same reason it works to control glaucoma, we think it could work to regulate the cornea," Dr. Reinach said.

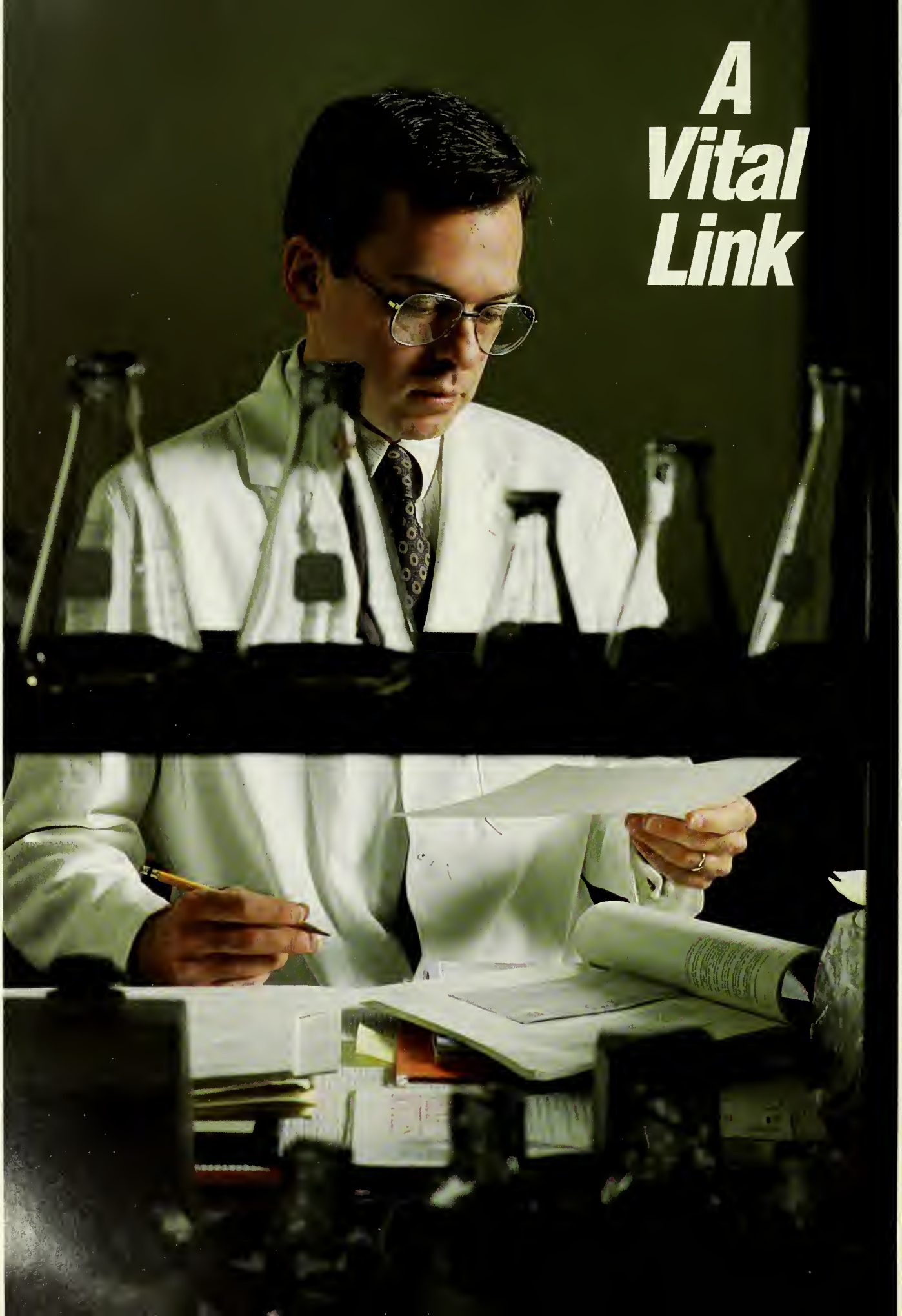
The researchers also are studying calcium—"another parameter involved in the chain of events," Dr. Socci said. They theorize that calcium has to be regulated to maintain transparency.

Of course, many questions remain unanswered. The chain of events is only just beginning to be dissected and understood. But the researchers are confident that the answers will unfold as their work progresses.

Researchers are probing ways to repair cloudy, dysfunctional corneas.

"We don't by any means have all the answers," Dr. Reinach said. "But we've opened up a Pandora's box; we've opened it up to further probing."

—Christine Hurley Deriso


A
Vital
Link

Dr. Dennis Defoe is looking at a weak yet vital juncture in the eye.

It's a communication point between two cells in the eye's retina.

It's also a point where sight can be lost.

As you look at the eye from front to back, the retina is the final point where light—the source of vision—is collected.

It's where impulses are generated and travel via the optic nerve to the brain where the impulses are translated into the images we see.

Trauma or the thinning that comes with age can result in tiny tears in the retina. Fluid from inside the eye can leak through the tear and cause the retina to detach.

The point of detachment is between the retina's photoreceptor cells —those cells that produce the protein which absorbs light and transduces light into an electrical signal—and the pigmented epithelial cells—cells which support the photoreceptor cell.

Dr. Defoe is interested in cell renewal, how cells renew their components, particularly their cellular membranes.

He found the retina a fascinating model for studying this process.

The living circle works this way:

"Throughout life, photoreceptor cells in the eye continue to produce light-absorbing protein and to turn it over in this sense. They produce it and then they get rid of older molecules," he said.

Old protein is then handed over to the pigmented epithelial cells which take it up, degrade it and recycle the precursor components so the circle can begin again.

In laboratory studies, the researcher has watched retinas lose their ability to eliminate old, excess material.

The debris can interfere with the exchange of nutrients that the epithelial cell affects. Consequently, the photoreceptor cells die and animals go blind.

"The interaction is quite weak naturally and subject to disruption," Dr. Defoe said of the vital juncture between the photoreceptor cells and pigmented epithelial cells.

"But during the process of turnover or shedding, the adhesion increases because the cells are interacting directly in order to turn over photoreceptor material."

An interesting aside is that this turnover process seems to occur about the same time of day in the animal species studies. The process occurs primarily when the lights first come on in the morning.

"We've been looking at adhesion, but we have been looking at it with respect to this process because we feel that there seems to be stronger adhesion during the period of turnover.

"So we have been investigating this process and changes that occur in the process in the two cells that might be responsible," the researcher said. He is particularly interested in the changes in the surfaces where the photoreceptor cells and pigmented epithelial cells meet.

When detachment occurs at this vital juncture, the potential exists for the retina to heal or to continue to separate.

Should retinas detach at this juncture, photoreceptors begin to degenerate.

"So there is something about the interaction between photoreceptors and the epithelium that is quite important for the survival of these neurons," Dr. Defoe said.

Treatments for retinal detachments include laser photocoagulation, which can be used early on to seal a retinal tear.

But the intense laser light not absorbed by photoreceptor cells is strongly absorbed by a pigment in the eye called melanin and that portion of the eye welds together, much like a fried egg, Dr. Defoe said. That leads to functional loss of that portion of the retina. However, the loss typically is not noticed by the patient because tears typically occur in the periphery of the eye.

If fluid has had time to accumulate in the eye, surgery must be performed to drain the fluid, then a band is placed around the eye to encourage reattachment. Other techniques include freezing to form an adhesion and injecting gas inside the eye to push the retina down.

"We are trying to figure out alternative ways to encourage reattachment without resorting to that type of treatment," Dr. Defoe said of measures such as laser photocoagulation.

Dr. Defoe has shown in animal studies that a certain degree of reattachment occurs within a certain period of time.

But then, without help, no more will occur.

The researcher wants to better understand how and why reattachment occurs naturally.

"In order to do that, you have to modulate it, you have to inhibit it or you have to promote it. So we are adding drugs that will cause it to occur more often. And, trying to raise antibodies that block reattachment so we can identify molecules that are important," Dr. Defoe said.

"We've taken this one step further."

With his animal models, he takes the eye cups, detaches the retina and removes the pigmented epithelium. He allows this epithelium to grow in culture. Then he adds retinas to see if reattachment will occur.

"This allows us a little bit more flexibility, at least in manipulating the epithelial cell. We can attempt to alter its functioning prior to adding retinas," Dr. Defoe said.

The compounds he's found most useful are those which promote shedding, the process that results in turnover of protein.

One compound Dr. Defoe has studied is glutamate, a salt product similar to the one used in Chinese food and one that is a powerful excitant of many neurons.

At concentrations required to promote adhesion, this compound also damages neurons. However, it might be possible to develop compounds that do not have these side effects, Dr. Defoe said.

He also is looking at some natural compounds that excite the neurons without damaging them.

The researcher has not yet found one compound that appears to be the answer.

But his goal is to keep looking to try to better understand this cell interaction, how to promote it and—eventually—to give the physician useful information for better treatment.

—Toni Baker

Brittany's Battle

Every little thing catches Brittany Stringfellow's eye, and she loves to explore her ever-expanding world.

Consequently, the 14-month-old is hard to keep up with. But Brittany's mom doesn't complain. She's too busy counting her blessings. If it weren't for the care her daughter received at the Medical College of Georgia, Brittany would likely be totally blind.

Tiffany Springfellow of Grovetown, Ga., was only 29 weeks pregnant when her doctor discovered that the twins she was carrying were in distress. He performed an immediate Caesarean section at MCG. One of Ms. Stringfellow's daughters died shortly thereafter. The second, Brittany, was whisked to intensive care where she fought for her life for the next several weeks.

"She had about every problem you could think of," Ms. Stringfellow said. "They told me not to get my hopes up." Brittany weighed a scant 2 pounds, 2 ounces. Her chance of survival was slim.

But Brittany turned out to be a fighter. "She was doing awful for a long time, but one day, she started eating well and gaining weight," Ms. Stringfellow recalled. It was the turning point Ms. Stringfellow had been waiting for. Her daughter, now 2 months old, would live.

Brittany had won the fight for her life, but another battle lay ahead: the fight for her sight.

One potential side effect of prematurity is a disorder in which blood vessels meant to supply the eye's retina are incompletely formed and fail to reach all of the retina.

"In prematurity, the vessels haven't had time to reach their destination. And in some cases, after birth, they start growing in the wrong direction," said Dr. John S. Davis, assistant professor of ophthalmology at MCG.

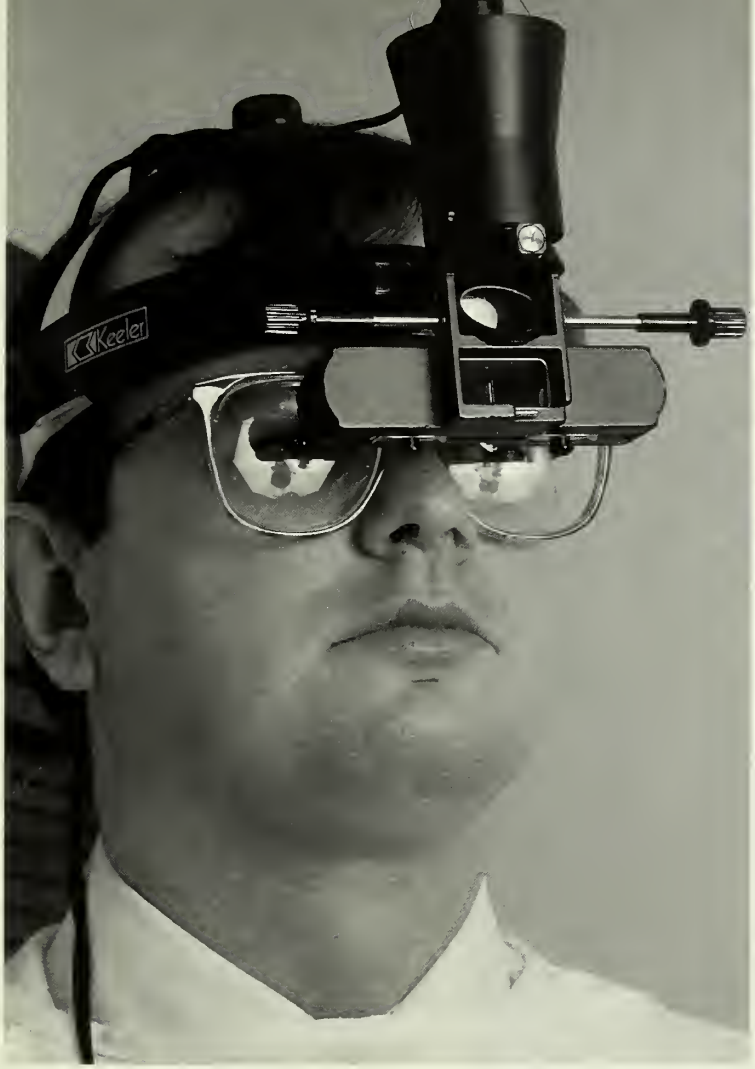
Instead of growing into the retina, the vessels veer off and grow into the vitreous cavity, the clear gel inside the eye. The disease corrects itself 95 percent of the time; the wayward vessels redirect their path. But not always. Uncorrected, the blood vessels contract and cause retinal detachment, resulting in blindness.

The disease, called retinopathy of prematurity (ROP, formerly known as retrolental fibroplasia), affects 5 percent to 10 percent of very low-birth-weight babies. At age 2 months, Brittany was diagnosed with the disease.

Dr. Davis routinely performs ophthamoscopy, a procedure to examine the eye interior, on low-birth-weight babies at MCG to determine if they have ROP. He grades the severity of the condition and determines the risk of blindness using an international ROP classification system. He monitors the infants to determine whether the vessels correct their path.

Those whose ROP persists reach a stage called threshold—"that's when they are considered at high risk of blindness," Dr. Davis said. ROP victims usually reach threshold between 8 and 12 weeks of age.

"What we do at that point is try to prevent (retinal detachment)," he said. "The biggest advance to accom-



Brittany Stringfellow (opposite, with mom), underwent cryotherapy, which saved the vision in her left eye.

Dr. John S. Davis (left).

plish that is cryotherapy. Nothing has been shown to be as effective as this treatment."

Cryotherapy cuts the risk of blindness in half. A small probe is used in the procedure to freeze the retina, which is generating an abnormal, detouring signal to the blood vessels. The probe is applied to the eye surface for a few seconds at a time. The total procedure takes about half an hour. If both eyes are affected, as is generally the case, both eyes may need treatment.

"Successful cryotherapy causes the disease process to change," Dr. Davis said. "New, normal blood vessels ultimately continue to where they're supposed to grow. Old, abnormal vessels atrophy."

Alternatives to cryotherapy, including vitamin E supplementation and limited light exposure, have been minimally successful, at best.

Cryotherapy carries very rare risks, such as bleeding of the eye, which normally clears on its own, and the risk of anesthesia. Babies undergoing the procedure are usually completely anesthetized. But MCG physicians work together to ensure success. "It's a team effort," Dr. Davis said. "Neonatologists, anesthesiologists and ophthalmologists are all involved."

The team, headed by Dr. Davis, performed surgery on Brittany's left eye shortly after her diagnosis. The retina had already begun to detach. The surgery only lasted about an hour, but it seemed like an eternity to Ms. Stringfellow, who was pacing in the waiting room.

"There's no way to describe what it's like," she said of the thought of surgery being performed on her baby who was still so tiny that she had to wear doll clothes.

But her jitters were a small price to pay; the surgery was successful. The cryotherapy had saved her sight.

"We can determine if the surgery's been effective within the first couple of weeks," Dr. Davis said. Eye examinations confirmed that the retinal detachment had been halted in Brittany's eye and that the ROP was regressing. Complete regression takes about six months; the babies are monitored for at least that long.

Shortly after her first surgery, Dr. Davis performed cryotherapy on Brittany's right eye. Unfortunately, an eye examination after the surgery indicated that the procedure hadn't worked. The retinal detachment was continuing. She was transferred to Emory University Hospital in Atlanta to have the retina reattached. But the retina tore during surgery.

Brittany is blind in her right eye, which is slightly smaller than the left and is easily irritated. She wears glasses to enhance the near-sighted vision of her left eye.

"She has to get up close to see things," Ms. Stringfellow said. "The doctor doesn't know how much vision she has in her left eye. We won't know that until she can tell us what she sees."

But the 18-pound toddler smiles back when smiled at and eagerly grabs anything that looks interesting. Her family is confident that Brittany, who already has overcome more obstacles than many people face in a lifetime, has a bright and healthy future.

Meanwhile, MCG researchers are participating in a new National Eye Institute-funded study to further refine techniques for treating ROP.

"If the retina detaches, the question is, what is the best procedure for reattaching it and what is the visual outcome?" Dr. Davis said. Adults with retinal detachment can have their vision restored.

If the researchers determine that the same is true of infants, they will probe enhanced methods of infant retinal reattachment—ways to ensure even brighter futures for the Brittanys of the world.

—Christine Hurley Deriso

The Road to Success

Imagine referring to a road map to plan a trip. You target your destination, then identify the roads which lead to it. But what if those roads veer off before reaching the destination?

Retinopathies, non-inflammatory retinal diseases, are much like that road map. Blood vessels meant to supply certain areas of the retina instead veer off in the wrong direction. Consequently, some retina areas are malnourished. And chaos ensues in areas receiving unneeded blood.

"It appears that in most retinopathies, the same things happen to blood vessels: they grow where they're not supposed to and become leaky, and blood proteins and substances end up where they're not supposed to be," said Dr. Ruth B. Caldwell, associate professor of anatomy at the Medical College of Georgia.

"Because the vessels are 'sick,' there is a lack of blood supply to the retina. So the body is signaled to produce more vessels, but they often grow into the wrong place," she said.

Dr. Caldwell, funded by the National Eye Institute and the Juvenile Diabetes Foundation International, is researching the process. "In normal eyes, something keeps the blood vessels where they're supposed to be," she said. And even in diseased eyes, not all blood vessels go astray. Dr. Caldwell wants to know why.

"What are the controls provided by other cells in the retina that keep the vessels (from rerouting), and what goes wrong in the cells that let it happen?" she said.

Diabetics, premature babies and the elderly are most prone to retinal vascular disease. Diabetic retinopathy is the leading cause of blindness in adults under 60. Laser technology can treat the condition, "but even though it works very well, the vascular changes can occur again in some cases," Dr. Caldwell said. She hopes that a better understanding of the process can lead to preventive treatment or even a cure.

And Dr. Caldwell, using animal models, is learning more about that process every day. "We think that in a disease like diabetes, there is damage to blood vessels to begin with, probably as a result of elevated blood sugar," she said.

She also is further dissecting the process leading to all forms of proliferative retinopathy. "We have begun to characterize changes in the retinal supporting cells in their protein expression and location in the retina," she said.

She has found that some of those supporting cells become displaced prior to the rerouting of vessels. "Why? Finding out is the next step," she said. She plans to test various causes to see if she can induce the same changes. If successful, she'll have moved a giant step forward in keeping retinal blood vessels on the straight and narrow.

—Christine Hurley Deriso

Combating Cataracts

Consider for a moment what has been lost when one loses his sight. It isn't only the ability to function normally, but also the special feelings related to sight. The way we start off the day by seeing the people we love. The awesome beauty of the snow-capped Great Smoky Mountains or the sunset over the Gulf of Mexico. Imagine these things being lost forever with no hope of ever experiencing them again.

For many diabetics, the loss of sight is a fear they must deal with every day. The extra sugars in the bloodstream greatly accelerate processes associated with aging that over time happen to all of us.

Research at the Medical College of Georgia is under way to slow down the rate at which cataracts form on the eyes, eventually causing blindness not only in diabetics, but in older people as well.

"Cataracts occur when the proteins of the lenses of the eyes become so cloudy that they become opaque," said Dr. E.C. Abraham, professor of cell and molecular biology. "This process takes many years even in diabetics, but since it is happening in all of us, if we live long enough, it will eventually be a problem."

Cataract formation is one of the most common causes of impaired vision and blindness. Cataract surgery, the safest and most successful solution available, is performed a million times annually in the United States.

Slowing the progression of cataracts by 10 years would cut that number in half, Dr. Abraham said.

Sugars in the blood, especially glucose, are believed to be responsible for this buildup on the lenses.

The lenses are made up of proteins called crystallins. The body continues to produce crystallins throughout life, so people die with the crystallins they are born with plus those produced during a lifetime.

Research led by Dr. Abraham has shown that the crystallins bond with the sugars in the blood.

"Once these sugars attach, it is not possible for them to be separated," Dr. Abraham said.

Diabetics have more problems with this bonding because the level of sugar in the blood may be several times greater than in non-diabetics, according to Dr. Abraham.

This bonding between the sugars and the crystallins, called glycation, is a continuous process, but one that researchers at MCG are hoping to find a way to slow down.

"We have been looking for compounds which have the potential to inhibit glycation and thus having an anti-cataract effect," Dr. Abraham said.

Recently, new techniques have allowed researchers to detect finite changes occurring at the protein level. This ability lets them see if they are in fact slowing down the rate at which the sugars attach to the crystallins.

Animal tests have shown that aspirin inhibits glycation and delays cataract formation in laboratory animals.

The aspirin works by bonding with the crystallins. Since the chemical bond is only possible at certain points on the protein molecule, the aspirin will bond instead of the sugar rather than along with it.

Aspirin does not have the same vision-impairing effect as the sugars, according to Dr. Abraham.

"This research is already showing great potential benefits for the diabetic patient, but it also may lead to other medical advancements," said Dr. Abraham.

Originally, Dr. Abraham's studies were supported by a grant from the American Diabetes Association and later by a National Eye Institute grant.

The MCG team studying the effects of glycation have now applied for a grant to study the possible effects of glycation on atherosclerosis. Dr. Abraham believes the bonding of the collagen in the arterial wall and blood lipoproteins with the sugars may be at least partly responsible for the formation of plaque in the arteries.

If aspirin also inhibits the bonding of sugars with collagen and lipoproteins, it could explain the apparent benefit in cardiovascular health reported by cardiologists, according to Dr. Abraham. It may also lead to the use of aspirin in combating the effects of aging in other areas of the body.

—David Waller

Drs. E. C. Abraham (right) and S. Swamy Mruthinti.

Too High a Price?

Americans, notoriously big on hygiene, spend a collective mint in the quest for squeaky-clean hair and skin. But are our eyes paying the price?

Dr. Keith Green, Regents professor of ophthalmology at the Medical College of Georgia, says the detergents we put on our face and hair every day may cause long-term damage to our eyes.

Dr. Green began a study to look at the effects of using eye drops. The drops contain a detergent which keeps the solution sterile. He was looking to see if the detergent penetrated the cornea and invaded the rest of the eye.

"We determined that it did not make it past the cornea," Dr. Green said. "Therefore, we concluded that there was no damage done to the eye, or the rest of the body, for that matter."

After determining that the eye drops were safe, Dr. Green began to wonder about the shampoos and other detergents that get into our eyes every day. Most of these products contain a detergent called sodium lauryl sulfate, or SLS.

Using a radioactive mixture containing an SLS concentration about one-tenth that in shampoo, Dr. Green determined that the SLS does penetrate the cornea and is able to move into other parts of the eye in rabbits.

"Not only did we see the presence of the SLS in other parts of the eye, but it was also present throughout the rest of the body," Dr. Green said.

Further study demonstrated that the SLS causes changes in the amounts of some proteins in the eye of the tested rabbits. Additionally, it may cause modifications in the proteins in other parts of the body.

Once the SLS penetrates the eye, it is detectable for up to five days. This allows a single exposure to damage the proteins for an extended period of time. If the reaction is the same in humans, people could potentially have the SLS in their eyes consistently, according to Dr. Green.

The rabbit eyes that contained the SLS were much slower in recovering from injury.

"SLS treatment extends the healing time of the corneal epithelium (the cellular surface layer of the cornea) up to 10 days," Dr. Green said.

That compares with a normal two-day healing time. This information is especially important to those susceptible to eye injury such as contact-lens wearers or those who may require eye surgery.

The MCG studies also concluded that greater concentrations of SLS were able to penetrate the eyes of younger rabbits, suggesting that young people may be even more susceptible to damage resulting from SLS than adults.

"Baby shampoos contain SLS also," Dr. Green said. "It is also true that small children are more prone to get the detergents in the eyes than are adults."

As a result of his work, Dr. Green recommends that shampoos and soaps containing SLS be used more cautiously until further tests can determine the exact extent of damage to the human eye, if any. He also suggests that research begin to explore the possible effects of SLS taken in through the eyes on the other organs of the body in which the detergent was detected.

—David Waller

Plan Your Giving

A Perpetual Gift

In 1929, the Medical College of Georgia was facing a very uncertain future. Not only were the preliminary effects of the Great Depression being felt, but the political realities for financial support of the school suggested possible closing.

It was in this environment that Bowdre Phinizy established a trust which would provide lifetime security to his wife, then his remaining assets would go to MCG. Mr. Phinizy's will, dated July 29, 1929, provided financial security to Meta Phinizy until her death in 1965.

In January 1966, the college received a significant amount from the estate which the Phinizy family named the L. H. Charbonnier Endowment Fund. The Charbonnier fund has had a tremendous impact on the college. Through capable management, the market value of that fund has grown two and a half times the original amount in addition to all the income it generated over the years.

This gift demonstrates the perpetual value of an endowment. Your consideration of leaving a gift, regardless of size, in your will provides the continued mark of excellence for MCG. A gift through your will is a significant way to support the growth of the institution and will continue to contribute to the health care needs of our society.

If you are considering a gift in your will, your attorney can make the appropriate provisions. Our office can help you determine the purposes, uses and administrative processes to manage such a gift.

Consider one of these five ways to make a bequest:*

1. Outright bequest, unrestricted as to purpose: leave a specific dollar amount or percentage of your estate to the MCG Foundation to help the most urgent needs of the institution. (Securities or property also can be bequeathed.)

2. Outright bequest, restricted to a particular college, scholarship fund, etc.

3. Bequest of residuary estate: leave the remainder or a percentage of the remainder of your estate after all other bequests, liabilities and expenses have been fulfilled.

4. Charitable Testamentary Trust: create a trust via your will, the income going to one or more beneficiaries for their lifetime and then the principal going to the MCG Foundation.

5. Contingent bequest: provides a gift to MCG only if your primary beneficiaries do not survive you.

Our office will be glad to assist you and your advisers with any questions concerning a gift in your will. For more information, fill out the coupon below and mail to Bruce Howerton, FI-100, Medical College of Georgia, Augusta, Ga., 30912.

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❑ I've already included the MCG Foundation in my estate plans.

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